DOCUMENT RESUME

ED 442 317 HE 032 887

AUTHOR	Hum, Derek
TITLE	Tenure and Pay Structures in Canadian Universities. Research Monographs in Higher Education, Number 4.
INSTITUTION	Manitoba Univ., Winnipeg. Centre for Higher Education Research and Development.
ISBN	ISBN-1-896732-20-8
PUB DATE	1998-00-00
NOTE	95p.
AVAILABLE FROM	Centre for Higher Education Research and Development, University of Manitoba, 220 Sinnott Building, 70 Dysart Road, Winnipeg, MB, Canada R3T 2N2.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Career Ladders; College Faculty; Foreign Countries; Higher Education; Incentives; Institutional Administration; Personnel Selection; Promotion (Occupational); Student Motivation; Teacher Employment Benefits; *Teacher Salaries; *Tenure; Tenured Faculty; Unions
IDENTIFIERS	*Canada; Germany

ABSTRACT

This monograph examines tenure and pay structures in Canadian universities, focusing on hiring, tenure, promotion, salaries, and termination; and examining the employment relationship from both economic and managerial perspectives. After briefly reviewing the concept of tenure, the discussion moves to career hierarchies and pay structures, including career ladders (hiring, tenure, and promotion), and wage structures (underpayment and overpayment of professors), which are examined from an employment contract perspective. The next sections focus on unique features of tenure (e.g., why so many candidates are hired for a single competitive tenure position or why those denied tenure must be asked to leave) and propose several alternative routes to tenure. Other topics considered are whether standards differ for universities with a more egalitarian philosophy, and the rationale for tenure as a way of protecting faculty. A brief section looks outside the Canadian system to examine the German system of hiring professors. Other sections of the monograph discuss incentive structures and their design, particularly the tension between research and teaching, and the profound influence that tenure has on collective bargaining between faculty associations or unions and university administration. The final chapters offer suggestions for reform and discuss some of the implications. (Contains 56 references.) (SM)

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RESEARCH MONOGRAPHS IN HIGHER EDUCATION
Number 4

TENURE AND PAY STRUCTURES IN CANADIAN UNIVERSITIES

Research Monograph Series

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TENURE AND PAY STRUCTURES IN CANADIAN UNIVERSITIES

by

Derek Hum
St. John's College
The University of Manitoba

Series Editor

Alexander D. Gregor
Centre for Higher Education Research and Development
The University of Manitoba
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TENURE AND PAY IN
CANADIAN UNIVERSITIES

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FOREWORD

The *Research Monographs in Higher Education* series reflects a central mandate of the Centre for Higher Education Research and Development, that of fostering and disseminating research related to postsecondary education. A chorus of commission reports and policy statements in recent years has lamented the dearth of solid research available to those attempting to study and manage the enormously expensive and complex enterprise of Canadian higher education. The Centre for Higher Education Research and Development has made this case itself, in its briefs to such commissions; and it is attempting in its own programs and activities to do what it can to remedy the situation and to respond to what has so clearly been identified as a national need.

In this current monograph, the Centre is delighted to be able to play a part in the dissemination of Professor Derek Hum's study of tenure and pay in Canadian universities. It is almost an understatement to say that those interlocked topics have maintained a primacy among the issues of contention surrounding and permeating accountability; and with an increasing readiness of governments to intervene in the internal affairs of the academy, and seemingly permanent resource constraints, it is unlikely that the topics will diminish in importance. Professor Hum's study is, therefore, a particularly timely one. It is written by an economist, but in a style directed to a general audience. It is infused with humour, but at the same time, is entirely serious about the dilemmas we face and the possible strategies that might be considered in their solution. His monograph provides the basis for a very useful rethinking of the debate, and will leave both those inside the university and those outside with a better understanding of a complex set of issues that can otherwise appear dangerously simple.

Alexander D. Gregor, Ph.D.

Series Editor

ACKNOWLEDGEMENTS

I am indebted to a large number of people, including participants at seminars at the University of Manitoba and University of Trier, Germany, where portions of the present manuscript were first presented. Many individuals read various drafts of the present work and offered encouragement and suggestions. I am especially indebted to my colleagues at St John's College, Norm Cameron, Rod Clifton, Mary Kinnear, Paul Thomas and Anthony Waterman for their help and guidance with respect to references, style and content. Matthew Kwok and Wayne Simpson (University of Manitoba) were also generous with their comments and suggestions for improvement. Frank Strain (Mt. Allison) provided information on Mount Allison's salary structure, and Steve Easton (Simon Fraser University) provided information on Simon Fraser's. Hans Braun (Trier) was especially patient in helping me understand the German university system. Alexander Gregor of CHERD was especially efficient in considering the manuscript, and ensuring that everything went smoothly. Audrey Carroll (CHERD) was indispensable with editorial advice and information. Needless to say, the views and opinions expressed in this essay are mine alone, as well as the manner of their phrasing and presentation.

PREFACE

This is an essay, although a somewhat quirky one. Unlike the pure genre, it contains some diagrams, a sprinkling of math here and there, digressions, some caricature and even a parable as narrative device. It also attempts a good-humoured tone, though sometimes irreverent, in talking about a subject that many may feel should be discussed with great solemnity because the stakes are high, the problems difficult and the passions strong. Furthermore, an examination of tenure and pay of university faculty, however earnest and good-intentioned, will strike many as somewhat self-serving coming from a well-paid and tenured professor, especially when my "bottom line" reveals that the institution needs redesign and reform rather than complete and wholesale rejection. My only response is to suggest the reader consider seriously the arguments presented.

The genesis of the present work is an accident. During the academic year 1995–96, the university where I teach and research suffered one of the longest and most bitter faculty strikes in Canadian history. The issues were many, including wages and the like; but the rallying cry eventually became one of preserving "academic freedom," "collegiality," "university autonomy," "accountability," "excellence" and of course, "faculty tenure." The politicians, not to mention the general public, seemed to have a less-than-firm grasp of the issues at stake when such terms were bandied about. Understanding seemed no less superficial among students or faculty, especially when pressed to define and defend such notions as "collegiality" or "academic freedom" in specific detail. Like a postmodern Humpty Dumpty on the other side of the looking-glass, all sides were using words as if they owned them, and could make them mean whatever they wished. Calm conversation was not possible, and its lack may be partly attributed to the bad tempers caused by having to picket in cold winds and deep snow. Nonetheless, the strike was eventually "settled," but industrial peace is unlikely to be long-lasting, either here or on other campuses because, in my judgment, the fundamental structure and practices of the university, including the thorny question of tenure, have not been altered. Necessary action has only been deferred.

Shortly after witnessing the strike and its denouement, I went far, far away (to Tasmania) on research study leave. Separation in time and distance, as well as exposure to another institutional culture, afforded benefits beyond escape from the lingering acrimony at home. This tranquillity was disturbed when I accepted an invitation to write a paper for a conference in Germany outlining some differences in university appointment practices between Germany and Canada. When the research for this paper was finished, the subject of appointment practices in Canada took on a life of its own, and as I continued to explore my own understanding of university goals and demands, I came to focus increasingly on the institution of tenure as a unique defining characteristic of faculty contracts. But tenure could not be seen in isolation from pay structures, promotion procedures, teaching and research responsibilities, or even the more fuzzy notions of "academic freedom" or "collegiality." Hence the theme of the present work was shaped, and I was emboldened to consider what economics might bring to an understanding of the tenure issue. I therefore plowed ahead, as they say in the West, and hope this small essay makes a contribution to public policy understanding of this mysterious thing called "tenure."

Nonetheless, this essay shies away completely from speculative or philosophical meanings of academic freedom, or collegiality, or excellence. I find no virtue in nominalism. Rather, I examine the structure of incentives for university actors from the perspective of self-enforcing incentive-compatible contracts, believing that, whatever else, arrangements or understandings in which members of the academy decide things among themselves (that is, self-enforcing) are less costly, less intrusive and therefore more efficient than all other alternatives. This is provided, of course, that faculty are motivated to work hard, to strive for knowledge, and to behave in a socially responsible manner, etc., (that is, incentive-compatible). From this standpoint, the self-enforcing incentive-compatible relationship serves as a beginning leitmotif for examining such elusive notions of "collegiality," "accountability," "academic freedom," and the like. At least, that is my intention.

To advance this aim, I have tried to write for a general audience that is concerned about university matters and public policy rather than one which admires intricate economic models. Sometimes this requires over-simplification on my part, and even interpretations which the original authors I cite perhaps did not intend, but I have tried to be faithful to the ideas of my professional colleagues while hiding the "hard-core" economics. As well, I adopt a more informal tone than some might favour in my attempt to capture the nuance and subtleties of the arguments without the pyrotechnic displays.

The narrative strategy varies. For those parts in which I try to explain the underlying logic behind self-enforcing incentive-compatible contracts, I adopt a direct and sparse exegesis, relegating to footnotes the references to empirical findings, citations to authorities, commentaries, etc. so as to maintain a "clean" story line. Mercifully for the reader, this is confined to three sections only: the two discussing university career ladders and wage scales, and the one examining faculty unions and budget squeezes. Coincidentally, these are the only sections which have "pictures" or graphs as a visual aid, thereby saving thousands of words. And rather than providing a lengthy descriptive survey of actual hiring, promotion, retirement and bargaining practices among Canadian universities, I simply assert the stylized facts by assumption. This practice will prove acceptable to most economists but the relentless economic approach of some passages which argue in this fashion may not please others; yet I believe it is the only way to convey a "thick" interpretation of tenure and pay structures rather than a "thin" one, and I ask the readers' forbearance. Other than these sections, the tone of the rest of the essay is more casual, and the basic ideas are conveyed informally; that is, through the standard literary devices of example, metaphor, analogy, and even parable, but I hope that the argument will not be any less convincing. At many points, I draw comparisons between university hiring and promotion procedures on the one hand, and practices associated with sports, such as competitive tournaments, races, contests and the prize structures on the other, in terms either of determining winners or of meeting certain standards. Pointing out these similarities is not meant to be simply clever. Rather, we should openly acknowledge that many institutions in life — including universities and competitive sports — strive to identify those having the highest ability and to encourage best performances. Nevertheless, some Canadians may still find the comparison uncomfortable, so I have graciously avoided all references to hockey. This may turn out to be no concession at all, since hockey can be held to combine in one game two of the worst features of Canadian life — violence and icy surfaces.

Derek Hum

TENURE AND PAY IN CANADIAN UNIVERSITIES

DEREK HUM

The University of Manitoba

INTRODUCTION

The dust jacket of a recent book on the fate of Canadian universities, *Zero Tolerance* (Emberley, 1996), says it all. "Canada's universities are facing financial, spiritual and political collapse. Business, governments, faculty associations and special-interest groups have been quick to diagnose the university's ills, and quicker to offer a cure." A provocative review proclaims ". . . Canada's ivory towers [to be] choked by right-wing weed, left-wing brambles and much poison ivy." There is alleged much "academic rot."

The author of this provocative polemic devotes an entire chapter (Chapter 3) to academic privilege, especially the institution of tenure. Indeed, in listing the items which comprise the universities' "perception problems," Emberley puts tenure in first spot (p. 61). He characterizes the perception of tenure as an institution which protects 'deadwood' by offering lifetime job security, with little accountability and next to no monitoring of performance. And this tenure privilege comes with salaries that exceed all reasonable measures of productivity. No wonder university administrators can't reallocate scarce resources, control budgets, and serve future social needs. The mediocre and the incompetent and the over-paid have tenure; and they form a powerful coalition to block change.[1]

This essay cannot address all the universities' ills. Instead it focuses on such limited issues pertaining to faculty as hiring, tenure, promotion, salaries, termination and the like. It examines the "employment relationship" from different perspectives, but mainly economic and 'managerial', with a view to suggesting for discussion purposes an 'optimal' contract. The faculty member is assumed to want appropriate remuneration and work conditions conducive to promoting excellence (somehow defined). The university also strives for excellence in its staffing policy and reputation; it achieves this by hiring and promoting the best, as well as dismissing or retiring those who are less talented or productive. But these goals cannot be achieved without substantial financial and human resource costs, so it is asserted that the university contract should be, as much as possible, of the self-enforcing, incentive-compatible kind. Within this framework, tenure and promotion as well as the higher pay of senior professors are seen as integral to the university's purpose and unique circumstances. The academy is not just another workshop, professors are not simply under-directed employees, and scholarship and research is not an ordinary everyday commodity. The task, then, is to devise under conditions of imperfect information and uncertainty an employment relationship which achieves minimal monitoring costs (self-enforcing feature), maximum productivity (incentive-compatible feature), while enhancing the reputation and credibility of the institution. At the same time, there must be "fair play" as well as "fair pay."

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[1] Question: How many tenured professors does it take to change a lightbulb? Answer: None — tenured professors do not change.

This essay draws from a wide range of fields such as economics, labour contracts, game theory, bargaining models, public administration etc. since universities represent many facets of public policy concerns. Because a wide range of matters are mentioned, it may help the reader to have a short guide of the sections to follow. After a brief discussion of the notion of tenure in the next section, chapters 4–6 outline the heart of the theoretical perspective. These chapters discuss the framework in which hiring, pay, and tenure are viewed from an employment contract perspective. Four chapters (6–8, and 22) discuss the features of tenure, such as why there are many candidates hired for a single competitive tenure position, or why those denied tenure must be asked to leave. An important development in economics revolves around explaining the form in which particular institutions take, rather than simply asserting their desirability. Accordingly, these chapters discuss the "design" features of tenure. Chapter 9 explores whether standards differ for universities with a more egalitarian philosophy. Chapters 10 and 11 discuss the rationale for tenure to protect faculty from the outside and the inside, respectively. Chapter 12, as the title suggests, is a digression on the German system of hiring professors, included here for interest only. Chapters 13–20 discuss a variety of topics respecting incentive structures and their design, and particularly, the tension between research and teaching. Chapter 21 is fairly analytical, suggesting that tenure has a profound influence on collective bargaining between faculty associations or unions and university administration. The final three chapters offer a moderate suggestion for reform and discuss some of the implications in light of our foregoing comments.

THE IDEA OF TENURE

The idea of tenure when applied to university professors is easy to describe. But whether you perceive it as the hallmark of a civilized society committed to the pursuit of the unvarnished truth, or instead, as the unwarranted prerogative of a bunch of over-the-hill intellectual pretenders, depends on your perspective, particularly whether your inclination is to defend or attack the institution, and whether you earn your living within or outside the academy. A standard dictionary meaning of tenure would describe it as the act or right to hold property or office, or the period or term of such holding. In the case of universities, the property or office in question is an academic appointment, so tenure typically refers to permanent employment in a position, such as a professorship. This would also seem to be the understanding in common parlance.

This common understanding of tenure will have to do, for there is no special definition of tenure in statute. The period of employment in many institutions is often set out in an explicit contract for many individuals. Where it is not, in the sense that employment is considered ongoing, employment for an individual can be terminated by specific contingencies set out in advance, or upon a given period of notice. Where there may be a union contract or collective agreement, these conditions may be written down in a formal manner. Even if there is no specific collective agreement, there is often informal understanding about the meaning of tenure among university administrations and academic faculty. Leaving aside the set of legitimate reasons for dismissal arising from failure to perform prescribed duties or breaches of ethics, and the like, the idea of tenure is commonly understood within the university community as follows. If an academic has an appointment "with tenure," it is acknowledged that this professor shall have continuing employment with the university as long as the occupied position exists in the university. Further, the university undertakes to allow the incumbent to occupy that position even if the university could find a less expensive, or younger, or better qualified, or more desirable (in some sense) individual. Tenure is a bit of a "one way" relationship, however, in the sense that the individual academic is not bound to the university and may depart whenever convenient; but the university is not allowed to dismiss the tenured faculty member at pleasure. At the same time, there is nothing in the notion of tenure that implies that a professor could not be dismissed for cause. Permanent employment does not constitute immunity from further evaluation, ongoing accountability, or a continuing obligation to perform duties as set out by contract or custom. Furthermore, the definition of "permanent," or more accurately, when the period of tenure is understood to end, is left quite open. In some universities, the understanding is that tenure refers to an employment period up to some mandatory retirement age stipulated in advance. At universities which do not have a mandatory retirement age, it could mean literally life time employment. In other words, the understanding of "permanent" can be specific to particular universities.

The above, rather antiseptic, description of tenure gives no hint of the passion which the very word arouses. There are, I submit, at least three reasons why the public views tenure for university professors with such distaste. First, the standard freedom-of-expression defense so boisterously rehearsed by many academics is not totally convincing to those who may have little understanding of what academics "do" for a living. The variant of this argument — namely, that the pursuit of truth requires a freedom to research and investigate lines of inquiry unfettered by threats to personal economic security — is also unpersuasive to the general public. The relationship between the fuzzy notion of "academic freedom" and the necessity of lasting job security is regarded by the public as a tenuous one; what extra protection do professors need beyond those provided by human rights legislation and free speech laws? These are available to all citizens, and other citizens exercise them without life time job security. Whatever nuanced merit one may summon in this line of defense of tenure, the public finds the argument less than clinching. Even so, the public is probably more enraged for two other reasons, often unspoken.

The second and third reasons for the public's disapproval of tenure for professors are related, since they stem from the public's perception of tenure's alleged effects. Why should professors alone have life time job security? No one else does. And why should professors be paid so much, and what confidence can we have that they are doing their jobs? After all, they can't be fired because they have tenure. Little wonder that "tenure" is such an ugly word. As McQueen (1985) writes: " Never mind that there is *de facto* tenure in many organizations other than universities. It is with universities that the public above all associates this perceived license to shirk at an upper middle class standard of living."

In sum, then, the public's antipathy towards university professors with tenure is bound up with its view that university professors are overpaid for what they do, have an unreasonable amount of job security, and can shirk all they want. Or to put it another way, one suspects that tenure would be less of an issue for the public if professors were thought to be paid just above the poverty line for teaching fifty hours a week.

The suspicion that professors are indeed shirking at permanently high pay is enough to overcome any goodwill acceptance of the argument that academic freedom must be preserved. Sometimes academics remark on the similarities between their tenure and those of judges. As much as academics want to draw a parallel between their work and that of the judiciary, the public remains unconvinced. Academics like to point out that judges are appointed for life, and no one resists the argument that they should go about their work in an independent manner. Indeed, the need to ensure that judges are protected in their employment is readily accepted as a necessary requirement of impartial judgments. But the analogy falls apart when the public observes that court dockets are always crowded, judges sit in courts for long periods, and when absent, judges can be assumed to be spending their hours productively by writing judgments. This visible evidence of their "output," even if unread by the average citizen, is known to exist and thought valuable through media reporting. Further, if the quality of the judgment is less than high, the appeal court is there as a check. Therefore, judges are hardly candidates for the charge of shirking, especially when their work pace is determined by outside factors such as the police and crown prosecutors. In contrast, professors dictate their own work pace, often without extensive monitoring from outside, and their "output" is often shielded from the public gaze, appearing in academic journals, written in technical jargon, and little read outside specialist circles. Consequently, the public cannot readily distinguish between shirking professors sleeping on the job and those who are deep in serious thought with their eyes closed. And they invariably know more about the workings of the judiciary from police and legal programs on television than they do about faculty duties in a university.

Now, the notion of a career-long contractual employment arrangement, such as that found in university settings for academics, raises some interesting questions. The public has some idea of the teaching function of a university, perhaps extrapolating from their knowledge of high school instruction. But it is the research function that is perhaps least well understood. Essentially, it requires a long gestation period. It is not possible to hire academics to conduct research on a day-labour basis. While it might be possible to hire qualified individuals to deliver some lectures on a short term basis, it is not conceivable to have academics come in for a week or two to find a cure for a particular medical ailment, write a novel or historical treatise, compose a concerto, or set up a particle accelerator laboratory, and then leave. If, on the other hand, it is thought necessary or desirable to engage academics for these functions on a very long term basis, some form of contractual relationship with respect to continuing employment must be established. And if career-long contracts have any rationale, then there is freedom to deviate from a pay structure which gives the individuals exactly what they are worth at each and every instant of their employment. In other words, there may be reasons why one might wish to pay someone less or more than he or she is strictly producing at a given moment, so long as the total sum paid over the entire career is the "fair" amount. An employer-university adopting this type of wage profile is bound to draw notice that it is overpaying its older professors (who may also be producing less) when there are good young professors available in the market. And if the frivolous answer is that these senior academics have tenure and cannot be dismissed, the next obvious question by the general public is bound to be one of incentives to remove shirking when there is such iron-clad job security and so little "accountability." It is that proverbial question: Who is minding the store? that so upsets the general public.

It is apparent that public unease about tenure for academics stems from a variety of motives, some well founded, some perhaps not so but nonetheless common currency. To gain some insight into the role of tenure in the universities, and to dispel some myths, it is necessary to describe the career hierarchies and pay structures that attend most Canadian universities. Only then can the institution of tenure be explained. The next three sections attempt this task.

CAREER LADDERS: HIRING, TENURE AND PROMOTION

High quality faculty members who work hard and do their job well are the key to a good university. Therefore it is important that universities develop effective hiring and promotion procedures. The public may often have little acquaintance with the procedures by which career academics are selected, appointed, evaluated and rewarded. Indeed, they might suspect that academics are recruited by an advertisement as follows.

HELP WANTED: Professors for university positions. Must be willing to work up to 9 hours a week for an eight month stretch but otherwise flexible hours. Must be a self starter and set own questions to answer with no supervision whatever. Some committee duties and filling of forms. Annual holidays of only four months, but compensated with time off at Christmas and, after every six years, a sabbatical leave with pay. Good wages, rising with seniority and after a brief probationary period, job security for life. Pension and health benefits competitive. People skills and media relations experience not absolutely necessary. No dress code.

In Canada, the typical university career involves the following sequential steps: acquiring a Ph.D. after years of study, securing a probationary faculty appointment, attaining tenure status after a probationary period, and then progression through the academic ranks from assistant to associate to full professor, and eventually retirement. Consider first the hiring decision. Individuals attempt to convince hiring committees of their superior qualifications; and hiring committees try to select individuals who promise the greatest future contributions. This is the classic signaling/screening problem, with the emphasis on screening at the hiring stage, because the university has less reliable information on the talents and qualities of the prospective candidates. Accordingly, the Ph.D. degree, especially if from a well-regarded institution, is adopted as a reliable guide for screening by universities, but also as a necessary signaling mechanism by candidates themselves. In sum, the Ph.D. requirement for most applications serves mainly to screen out the less able (in conjunction with low pay, which is considered in greater detail in the next section). Nonetheless, the salary structure, particularly the starting wage, plays some role.

The signaling/screening situation is illustrated in Figure One, adapted from a recent graduate microeconomic textbook. (Mas-Colell, Whinston & Green, 1995). Education level (E) is depicted on the horizontal axis, productivity or wages (W) is depicted on the vertical axis. Let the origin on the horizontal axis represent the first university degree, so that the horizontal axis is effectively measuring post-graduate education. Candidates with high (H) abilities are indistinguishable by the naked eye from those with lower (L) ability. The marginal cost (financial, psychic, emotional, etc.) of attaining a Ph. D. is assumed lower for high ability individuals. Figure One depicts the preferences over various wage rate and education level pairs (indifference curves) for the high ability and low ability individuals. The indifference curve of the high ability individual will have a smaller slope.[2]

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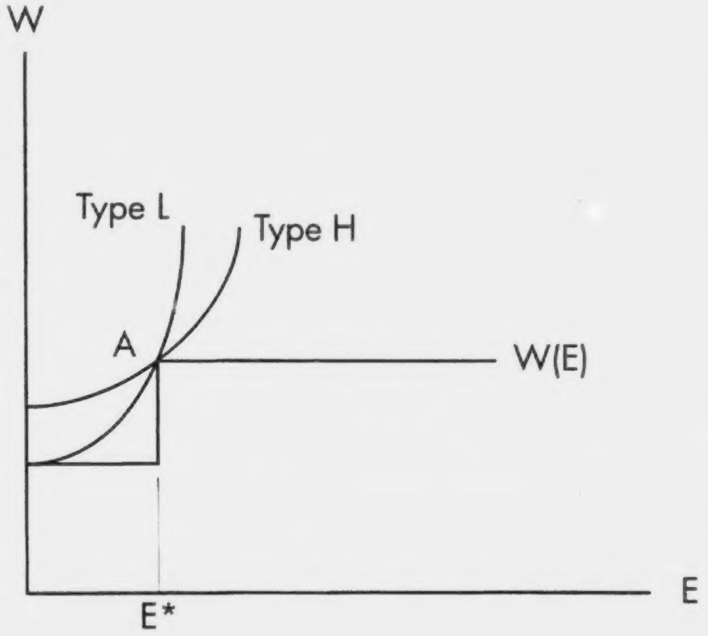
[2] In economic jargon, the marginal rate of substitution between wages and education level is equal to the marginal cost of education, and this will be less for the high ability individual. In the present context, where costs are not merely monetary, it is almost tautological to assert that it "costs" the high ability person less to get a Ph.D.

Figure 1



To complete this model, it is necessary to specify some wage schedule. Game theorists distinguish between a separating equilibrium, in which high and low ability individuals choose different education levels; and a pooling equilibrium, in which both types of individuals choose the same education level. The university's task is to design a wage structure which results in only the high ability persons choosing to obtain the Ph.D.; that is, a separating equilibrium.[3] Many wage structures can give rise to a separating equilibrium, such as the one labeled W(E) in Figure One. The wage structure W(E) will result in only high ability individuals obtaining the Ph.D., so universities can now reasonably regard the Ph.D. as a signal of the individual's ability. Under the structure W(E), low ability individuals will not acquire the Ph.D. since they are equally well off with no Ph.D. (at E = 0 on their indifference curve) as with a Ph.D. (at point A on the same indifference curve). A key assumption in the above analysis is that the Ph.D. is intrinsically valuable for future lifetime productivity (read, excellence in scholarship). For those believing otherwise, the signaling model is quite compatible with individuals' obtaining too much, or even entirely useless, education simply to acquire a signal of their initially-unobservable ability to impress university hiring committees. The Ph.D. is effectively the standard which prospective university faculty must meet simply to apply for a position.[4]

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[3] A pooling equilibrium wage structure will not yield a benchmark education level like, say, the Ph.D. The education level sustained by a pooling equilibrium can vary over a wide range. See Mas-Colell et al., 1995. p. 457.

Once an individual obtains a probationary appointment, the next barrier is tenure. The university now has some, but still imperfect, information on the candidates' expected future productivity. Candidates also have had some opportunity to demonstrate their teaching and research talents. Despite more information available, the fundamental rationale behind the process of tenure (but not the institution of tenure, which is discussed below) is the same as the hiring decision; namely, to decide which individuals should be granted tenure. Conveniently, we may refer to Figure One again, with some relabeling. The vertical axis again measures productivity or wage (W); but now let "E" on the horizontal axis denote some index of "education capital," "excellence" or "effort." The origin of the horizontal axis is now the Ph.D., and the indifference curves now refer to faculty members with Ph.D.'s. The university is therefore interested in distinguishing those who did not live up to expectations (say, the flash in the pan Ph.D.) from those demonstrating acceptable "E" and long run potential. A separating equilibrium structure such as W(E) should again be made known in advance and employed. The unique characteristic of tenure involves the termination of those refused tenure under the "up or out" policies of most Canadian universities on the one hand, and the granting of a "lifetime" contract to those successful.

Promotion through the ranks is again similar in rationale, but here the stakes are less. Since application for promotion is not a time-limited procedure like tenure, a rejected promotion application does not mean termination, and some individuals might even choose not to seek promotion. On the other hand, the wage structure may still play a critical role in fostering the right incentives. The issue of promotions is considered further in a later section.

The key feature of university contracts is this institution of tenure; and there is much rhetoric as well as misunderstanding of tenure. The naive think it means only "lifetime job security;" others forge a link between tenure and academic freedom, never precisely explained. This latter link is not explored here. In the present context, the tenure decision remains one fraught with uncertainty and asymmetric information. More information on candidates will be revealed if the tenure decision date is postponed; on the other hand, the consequences of an unfavourable decision for candidates is harsher if the decision is made later rather than sooner. This problem is intractable since there will always be uncertainty and imperfect information unless the tenure date coincides with the retirement date.

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[4] Incentive-compatible structures for self-selection can also be designed for interview candidates. Many universities invite prospective staff to their department to meet faculty, give a paper and visit the city. The story is told (but unconfirmed) that University of Nevada at Las Vegas (UNLV) has the following well-announced policy for candidates' expenses. If a candidate receives an offer which is accepted, full travel expenses are paid. If the candidate is not offered a position, full expenses are also paid. If a candidate refuses an offered position, no expenses are paid. The structure is intended to deter insincere applicants through self-selection. In the same spirit, the University of Manitoba might want to consider throwing in a Hudson Bay blanket as a signing bonus for those accepting an appointment other than summer session.

The focus on information asymmetries (rather than the academic freedom issue) sheds new light on the institution of tenure. Tenure, if designed properly, is directly related to university excellence and quality faculty through the lens of "self-enforcing," "incentive-compatible" contractual arrangements. Carmichael (1988) provides an excellent treatment of the efficiency of tenure. Tenure is both costly to the university and extremely valued by the faculty member. The opportunity cost of granting tenure to an incumbent is the lost teaching and research output of younger people who cannot be hired in future. Tenure is "incentive-compatible" because without it, incumbents would never recommend hiring people who might be better than they are. Tenure is efficiently "self-enforcing" because faculty have better information about incumbents than either university administrators or outsiders. Tenure (in the job security sense) is therefore necessary to motivate older (perhaps now less productive) faculty to select the best. With budget dollars for staff able to be shifted back or forwards across time periods, tenure (with its long run feature) secures the truthful revelation of who are the good candidates over all periods, and the university (as an institution) is guaranteed that those who are in the best position to judge (namely, faculty rather than administrators) have every incentive to make the best decisions. It follows, then, that the naive suggestion to get rid of tenure so that older, expensive professors can be fired and replaced with younger, cheaper professors would be disastrous in the long run.[5]

Suppose professors are granted tenure by an efficient self-enforcing incentive-compatible process in the sense that the "best" candidates are selected. What prevents these individuals from working hard until tenure is secured (usually rather early along the career path) and exerting the minimum effort thereafter? This raises the issue of "shirking," and how the wage structure and the promotion process might be designed to reduce shirking. This is considered next.

WAGE STRUCTURES: UNDERPAYING AND OVERPAYING PROFESSORS

The difficulty and prohibitively high cost of monitoring academic effort on a continuous basis recommends a certain pattern of contractual employment relationship. In particular, the implicit contract requires "delayed payment" in order to minimize shirking and malfeasance. The optimal form of this contract will also feature, as a general rule: wages which grow faster than productivity, pensions, lengthy tenure, high wages for senior workers, and mandatory retirement. But the key point is that, at any given time, individuals will not be paid exactly what their current production is worth. In economic jargon, the spot wage will deviate from the spot value of marginal product. For university

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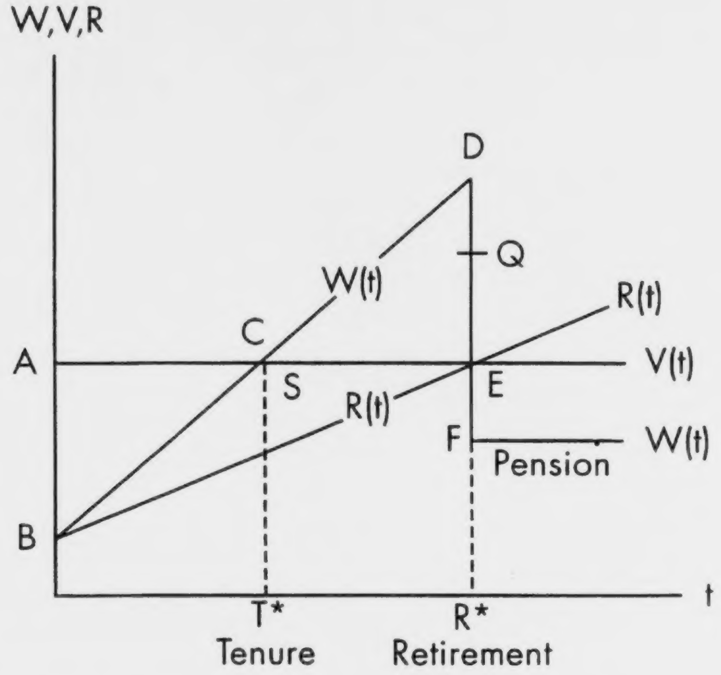
[5] Carmichael's analysis is deeper than I have described here. It might be helpful to rephrase some of these arguments in a non-academic context. Large Japanese firms understand the role of life long job security, knowing that senior workers will pass on their knowledge and skills to younger workers only on the understanding that their own jobs are safe. Here the incentive argument turns on specific training; in the main text it turns on information asymmetries.

Figure 2



academics, it means that young, junior professors will be underpaid, and old, senior professors will be overpaid. Politicians and the general public often find this unconscionable even though the phenomenon is not unique to the academy.

There are several rationales for this structure of contract. For example, delayed payment contracts introduce into the employment relationship a form of fixed cost, say hiring costs. (Hutchens, 1986) Anyone familiar with search and hiring in universities can testify to the high costs (all kinds) of this process, even limiting applicants to Ph.D. holders. However, the main purpose of delayed payment contracts, in the present context, arises from the difficulty of monitoring academic effort and performance — and to discourage shirking.[6]

The argument is illustrated in Figure Two. Figure Two traces the relationship between wages (W) and value of marginal productivity (V) through time. Suppose, for simplicity, that productivity is constant throughout; and that W(t) crosses V(t) at T*. R(t) represents the "reservation wage" profile; that is, the valuation of the time by the individual if not employed at the university. Other things being equal, academics should be indifferent to the two wage profiles W(t) and V(t) for the period up to R* if both have equal net present values. However, if receiving the contracted salary is contingent upon a given performance level, measured at specific intervals, then the costs associated with shirking are higher with W(t) than V(t). As Lazear (1981, p. 607) points out: "If. . . shirking results in . . . dismissal, then the larger is the amount of earnings paid at the end of the work-life, the greater would be the cost associated with a given amount of shirking."

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[6] The term "shirking and malfeasance" is standard in the contract literature and is used here without prejudice. I use the term "shirking" simply to describe academics not putting forth maximum honest effort according to the customary university norm. I ignore malfeasance.

Universities may also be tempted to act in bad faith. For example, if professors never communicated with each other about their university contracts, a dishonest university which cares nothing for its reputation could terminate all its professors at time T*. It is easy to see now that if T*, where W(t) crosses V(t) at point C, is the decision point for university tenure, professors will not shirk even if there is no monitoring by administration, and universities will not be able to fire, without cause, professors they do not like. Steeper wage profiles lead to less shirking, and flatter wage profiles will make employers more honest in the absence of "tenure" in the academic sense. (Lazear, 1981, p. 608). The delayed-compensation wage pattern may also be given a "bonding" interpretation in the spirit of Becker and Stiglitz (1974). Probationary academics post a "performance bond" via "payroll deduction" through wages less than productivity (approximately triangle ABC). This bond is then repaid in the form of wages which are higher than productivity in later years (approximately triangle CDE if retirement occurs at R*). Under this interpretation, those denied tenure should have their bond (or some portion) returned as severance payment, a practice not adopted by any Canadian university. The "bond" is therefore more like a forfeited security deposit.

Elsewhere Lazear (1979) examines mandatory retirement complications. The efficient retirement date from both the university's and the academic's perspectives is R* where the professor's productivity value, V(t) is equal to the reservation wage R(t). However, because the wage profile W(t) is "back-ended" to remove shirking, W(t) exceeds R(t) at R* and so academics will not voluntarily retire. Mandatory retirement or limited contracts are therefore necessary under this type of compensation profile, but it is important to note that the academic suffers no harm if the terms of the contract are clearly specified *ex ante*. In fact, the academic could be better off if the delayed compensation contract is "efficient" in the sense of eliminating shirking, and these "rent" gains are shared between the university and faculty member. (Lazear, 1979, p. 1265). In Figure 2, W(t) drops from D at R*, the retirement date, to F. W(t) beyond R* is interpreted as a pension benefit.

Whether or not university salary structures are designed to cut productivity profiles, on average, at the tenure decision point is an open empirical question. It is clear, however, that the wage profile W(t) after the tenure decision loses some potency as a disciplinary device to reduce shirking, and other measures must be enlisted.

There are good reasons, then, for universities to employ contracts which do not pay wages, W(t), which are continuously equal to the value of current production, V(t). Some industries, for example, the entertainment and sports industry, as well as commission sales people and self-employed individuals, do equate W(t) with V(t) in what might be called the "You eat what you kill" model. This is because output is easily measured and monitored. The contract is very "short term" since it approximates piece rate compensation.

An interesting question is why do academics accept a long term contract in which wages are deferred? People should generally prefer "money up front"; that is, wages at least equal to V(t) if not higher. Leaving aside the notion that it is purely a matter of bargaining strength between "strong" university administrations and "weak" faculty associations, what factors might explain why academic salaries exhibit wage profiles steeper than productivity profiles? Unfortunately, some possible answers are purchased only with greater complexity of argument than those examined above, and requiring multi-period models with uncertainty of continued employment (see Lam, Yiu & Wong, 1995).

Only an heuristic treatment is offered here. Individuals have preferences concerning the time pattern of their consumption (present versus future consumption, say, in a two period model). However, their productivity profile, and hence wage profile, may not match this pattern. If there are no possibilities to borrow against future expected higher wages, then the possibilities for "consumption smoothing" will be severely constrained. On the other hand, future productivity and employment is uncertain. If there is some nonzero probability of another job, either because of termination or a better offer, then expected future consumption is uncertain, depending as it does on such matters as the likelihood of termination, the distribution of wage offers from other employers, etc.[7] There is a trade-off, then, between the individual's desire for "consumption smoothing" on the one hand, and "insurance" against income loss on the other. It is possible to derive the relative strength of these two effects and its relationship to the productivity profile of the worker's opportunities to borrow in the capital markets. In particular, if workers have opportunities to borrow in the capital market, the wage insurance component will dominate the consumption smoothing aspect, and lead to a wage profile which is steeper than the productivity profile. In the university situation, whatever the borrowing opportunities of individual faculty, the institution of tenure is a relatively cheap but valuable way for the university to provide this insurance to professors, without distorting the goals of the self-enforcing incentive-compatible contract examined above.

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[7] More formally, individuals are assumed to maximize lifetime satisfaction over two periods: $U = u(c1) + u(c2)$ subject to a budget constraint $w = w1 + w2$. Possibilities are limited if no borrowing requires $ci = wi$. Hence some access to a "capital market" to aid consumption smoothing. Complications set in when second period contracts cannot be made binding in period one (slavery and indentured service is not allowed). This uncertainty means that the individual must now maximize expected lifetime satisfaction: $U = u(c1) + Eu(w2)$ where $Eu(w2)$ is the expected satisfaction to be had from the second period wage, w2. Of course, w2 is not simple to compute or calculate, depending as it does on the state of the labour market for the particular individual's services, the distribution of wages offers expected, and the like. Under these circumstances, a risk-adverse individual will seek to purchase some insurance as well. For more details see Lam et al., 1995.

TOURNAMENTS, STEAK KNIVES AND RETIREMENT

One dilemma of a career ladder structure which awards tenure relatively early is how to incorporate anti-shirking incentives after tenure. If tenure is achieved by professors in their early thirties, there are still thirty or so years of employment left. The wage scale may not have sufficient steepness to induce non-shirking, or it may be too costly. One alternative would seem to be promotion, in which faculty are differentiated by rank titles and/or pay. How should promotion be structured in the face of the continuing issue of costly and imperfect monitoring? One method might be to hold rank order tournaments, in which "prizes" (monetary and non-pecuniary) are fixed in advance but entirely arbitrary, in the sense of bearing no relationship to the productivity of either the eventual winner or average contestant. Tournaments of this type in which remuneration is based upon ordinal rank in a contest can induce the same efficient allocation as an incentive scheme based upon output level (Lazear & Rosen, 1981). And it is less costly to observe rank than to measure individual output. The tournament increases university output by encouraging all professors to work harder and to avoid shirking, *ex ante,* even though only one individual will achieve first-place rank *ex poste.* But obviously, care must be exercised in designing tournament rules and prize structures. It can be shown that, generally, players' efforts will depend on the spread between winning and losing prizes, and not the level of the winning prize itself (Lazear & Rosen, 1981, p. 846). Competitive tournament, which in the present context includes merit pay contests in universities, can be beset by questionable implementation and counterproductive damage to collegiality (Grant, 1993, p. 12). Indeed some prize structures can be extremely destructive. David Mamet's play/movie, *Glengarry GlenRoss,* is particularly instructive. The drama centers around a sales manager from head office who announces a contest to spur total sales. At the end of the contest period, the winner will receive a new car, the person with the second highest sales will receive a set of steak knives, and the salesperson ranking last is fired. The reward structure of this tournament is, however, incentive-compatible, if not perfectly collegial; and the spread between winning and losing prizes was influential. [8]

The delayed compensation contract requires a mandatory retirement date to induce workers to leave at the optimum date (Lazear, 1979), and to pay back the "bond" to the worker. Further, pension provisions (which can be part of this bond, simply annuitized) can be strongly coupled to mandatory retirement. Because the social and private optimum retirement date coincides with the mandatory retirement date (R* in our Figure Two), the mandatory nature, according to Lazear (1979, p. 1283) is illusory. Most

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[8] David Mamet is also known for *Oleanna,* a more literal depiction of university culture. In that play, political correctness, misunderstanding, and worrisome distractions arising from an impending tenure hearing results in anger and violence from a young professor towards a student.

Canadian universities have a mandatory retirement date (the exception being University of Manitoba).[9]

A specific mandatory retirement date is not the major problem with the logic of delayed payment contracts. More important are two other factors, both related to the changing nature of the environment outside the university contract. First, the "mandatory retirement" date of an optimal delayed payment contract is the point where productivity, V(t), cuts R(t), the reservation wage. Suppose a tenured faculty member receives an outside offer of employment paying, say Q. (See Figure 2) This is the valuation of the individual's services to the outside enterprise, and standard economic theory suggests that it is efficient for the faculty member to quit the university since marginal productivity is higher outside than inside the university. But Q is less than W(t), because of the delayed compensation design. Hence the faculty member will not resign. This immobility leads to reduced economic efficiency overall. The situation is exacerbated if, as empirical evidence suggests, academics suffer declining marginal productivity (measured by publication activity), possibly as early as 40 years of age (McDowell, 1982). In Diagram Two, imagine the V(t) profile drooping steeply a short time after T*, and the reservation wage profile becoming steeper as a result of poorer health, for example. The optimum retirement date then becomes earlier, say, at a point such as S. The discrepancy between productivity V(t) and W(t) also becomes much larger, and hence the scope for social inefficiency due to immobility grows larger. The result is as the public condemns — professors with lower and lower productivity, getting higher and higher salaries, and staying on in universities because they are paid too well to consider other options where their social contribution would be higher.[10]

The second feature affecting the optimum termination date has to do with factors beyond the university's control. A lengthening life expectancy due to better health care, changes in government programs such as old age pensions, etc., affect the "notch" at the customary retirement age. For example, old age pensions create a notch (upward) in the reservation wage profile. If old age pensions are reformed to start at a later age, the notch position will change, and also the retirement date. If life expectancy increases, a larger pension/bond refund is necessary, and there is inducement to work longer at the high W(t); that is, not retire. Increasingly, with pension benefits being vested immediately, the notion of the pension as a pay-back bond to guarantee the faculty member's services is untenable.

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[9] I will not discuss at length the absence of mandatory retirement at the University of Manitoba because it is irrelevant from the point of an *ex ante* optimal contract. If one knows in advance that the contract will not have a fixed retirement date, then tenure will be reinterpreted as literally "lifetime" job security, in which case the steepness of the wage gradient will be adjusted by actuarial calculations to reflect the uncertain date of "death" (i.e., retirement). As well, the extra discounted present value due to underestimating when a faculty member dies and paying an extra year or two of salary, valued at the point when the contracted is "signed" (at tenure), is trivial. The University of Manitoba's problems stem from having the rules changed after the game was well underway.

[10] Johnson and Stafford (1974, pp. 565–566) estimate an elasticity of substitution for junior and senior faculty in providing instruction in economics, sociology, biology, physics, and mathematics. They find that "... junior and senior faculty are quite substitutable in the academic production process."

DESIGNER TENURE I: WHY NOT OPEN TRY OUTS?

Let us return to the question of tenure and ask how the tenure process should be structured. If tenure were simply a reward granted to certain employees who have proven satisfactory, the main issues would centre around the difficulty of assessing performance, and determining those in the best position to make these evaluations. Carmichael (1988) has demonstrated persuasively that tenure plays a key role in eliciting revelation of true assessments by ensuring that the "best" person is selected. Tenure plays this crucial role by divorcing self-interest by incumbents in guarding one's own continued employment from the university's objective of retaining the best qualified faculty. But this explanation leaves unanswered such questions as: Why must there be a maximum time limit for tenure? Why must unsuccessful tenure candidates be dismissed? Why do universities not permit candidates from outside their university to compete for an announced tenure position? These, and other, questions pertain to the peculiar way in which most Canadian universities design their tenure practices.

Consider the pending tenure decision for a probationary faculty member. The faculty member does not yet have tenure, and there may well be similarly-experienced but better qualified individuals in the open market. If universities are going to embark on a lengthy and serious career-long commitment to an individual by granting tenure, why not have open try-outs to select the best individual? It is the case, perhaps, that the university might have better information on the incumbent probationary candidate than on outsiders, but this could be an advantage or disadvantage to the faculty member, depending upon the nature of this knowledge. Further, what is to prevent universities from hiring a large number of probationary appointments and offering tenured positions to a smaller number?

The last observation suggests that the tournament model is instructive. Sports teams often hold open try-outs; that is, an opportunity for any individual to compete for a "job" on the team on a "walk on" basis. But few teams rely entirely on this method to stock its roster with the best players. Rather, teams recruit and develop their own personnel. Even if we extend the analogy to the pure tournament situation designed to select the best player, such as the Wimbledon Tennis tournament, the number of competitors is still strictly limited (and seeded).

The theory of the structure of tournaments can give some hint why open try outs are not optimal. In the present context, it might be more congenial to describe the purpose of tournaments in phrasing more suited to the university culture. Academic research grants (such as SSHRCC awards, for example) to individual researchers or teams of researchers are essentially tournaments sponsored by outside parties; they are designed to foster excellence, promote research and scholarship, and to confer prestige. Similarly, large corporations in the private sector often hold contests in which the entrant with the best innovation or solution to an announced problem is awarded a prize. These have been referred to as "golden carrot" research tournaments (Taylor, 1995). Circumstances very similar to those experienced by universities in their human resources management motivate the research tournament rationale; namely, the impossibility of monitoring effort input, the uncertainty surrounding output, and the difficulty of specifying completely a contractual arrangement under such circumstances. Instead of attempting to specify a complete research contract and awarding the contract to a particular individual, a tournament is conducted instead, with structure [N, F, P], where N is the number of entrants permitted, F is the entrance fee, and P is the prize to the tournament winner. The optimal design rarely involves N = infinity; that is, completely open try outs, even leaving aside the obvious but trivial observation that higher volumes of entrants require more costly administration for the tournament organizers.

The reason why open try outs are never optimal is because of what economists term "externalities." All entrants (subject to being able to pay the entrance fee) will assess their expected payoff in terms of their likelihood of success in winning the prize. This expected payoff will also determine their level of effort. However, each contestant imposes an externality on others in the tournament, thereby influencing any particular entrant's probability of success. Specifically, the more entrants in the tournament, the less likely it is that any one person will win. For a given prize, continuous entry of more and more players erodes the incentive for others to innovate and expend greater effort (Taylor, 1995, p. 879). Therefore, there will be a limit to the number of individuals who should be allowed to vie for the prize.

If unlimited entry is non-optimal, it does not immediately follow that N must be 1. In other words, it may be appropriate that two or three probationary faculty should be hired to determine which of them will eventually succeed in receiving the single tenured position. Here, additional considerations will have to come into play. Is the probationary period designed to provide information merely to confirm a previously-made decision regarding the "best" choice? Does hiring itself entail a pre-commitment to the individual to exclude others from future consideration? Is the probationary period designed to assess how well the individual has adapted to the university-specific "training" rather than the substantive subject-matter qualifications? There are undoubtedly others. But nothing about the university per se suggests that current tenure practices are perfect. Other institutional arrangements are conceivable in pursuit of "Designer Tenure."

If open try outs are not efficient, some mechanism is then necessary to determine the number of tournament contestants. In industrial research tournaments, the entrance fee, F, plays this role. Similarly, the time and effort required to submit a competing tender is a quasi-entrance fee of sorts for some government contracts. It seems unlikely that Canadian universities will demand its new hires "pay" an employment entrance fee. Further, the ability to pay such fees may not be related at all to the qualities the university should seek for its long term faculty. Rather, the university might advance the entrance fee to its probationary hires through pay-roll deduction. In this interpretation, the fact that spot wages are below spot productivity for untenured junior faculty merely reflects their "payment" of the entrance fee for the tenure tournament rather than the standard interpretation of "posting bond" (Becker & Stiglitz, 1974). Interpretation of the underpayment as a "fee" rather than a "bond" may be marginally more pleasing, given that those denied tenure are dismissed without further payout. A non-refundable entrance fee might just be more palatable than not returning someone's bond.

A second way in which tournaments normally limit the number of participants is through "seeding" or pre-tournament trials. Seeding refers to rating the candidates, and it may be that universities deem that seeding and pre-tournament trial has effectively taken place during the probationary period. However, open tournaments imply no seeding, and an additional consideration explaining why open try-outs are not optimal revolves around the economic notion of adverse selection. Here, the context must be changed slightly, from the situation of a single tournament (or university) to a situation where there are more than one tournament (or university). The questions can, however, be posed more sharply. How should tenure procedures be designed? A tournament in which incumbents are privileged in some fashion but candidates from other universities are still eligible to establish their credentials would be a form of seeding. A tournament which excludes outside applicants is a closed or "invitation only" tournament. An open tournament may be inefficient as a result of adverse selection, because tournament players do not "self select." Further, "mixed leagues" may also not be efficient. (Lazear & Rosen, 1981) Here again, the mathematics of a full exposition is avoided, and an informal argument given. Without seeding, and with the university financing the entrance fee, there are no considerations for an entrant besides the probability of winning. Therefore, even if the probability of winning in the "superior" tournament is small but still positive, candidates with little (but some) chance of success will enter. Candidates will not self-sort themselves into tournaments in which they have the best chance of winning, but instead enter tournaments where the chances of winning may be small but the prizes are large. In the jargon of game theory, there is a non-separating equilibrium.

This may be a socially undesirable situation. Again leaving aside the issue of entrance fees and administrative costs involved in handling numerous applicants, the university's cost for open try-outs may be reckoned in university productivity and quality rather than the cost to the individual faculty.[11] Consider the limited situation in which try outs are closed, but two (or more) probationary appointments are always hired for each tenured position. Again, ignore administrative and financial costs in order to isolate the issue of productivity and quality. Without a hierarchy of university-*cum*-tournaments, this strategy implies that output is "additive" in the sense that it matters little who works with whom. But if output and quality increases more than proportionately (somehow measured) when "high ability" persons work with other "high ability" persons, this implies that the production process is more complicated than merely hiring the requisite number of warm bodies for the university. The best performances at Wimbledon typically do not occur when the top seeds play just anyone. Sorting or seeding play a key role in avoiding the so-called "contamination" problem, and the tenure decision becomes more than an act of granting job security. It becomes, in fact, all important.

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[11] There is an additional consideration for research tournaments where the number of entrants may be too high from a social point of view. While more entrants enhances the probability of a "breakthrough" in a given time, only the discovery itself is socially valuable. In other words, the social value of the second and subsequent independent, or even simultaneous, discovery may be socially valueless even though it may consume large resources (Stephan, 1996).

DESIGNER TENURE II: WHY A TIME LIMIT?

Universities invariably set a maximum duration for probationary appointments. Often, university collective agreements (if there is one) or customary practice establish a so-called "maximum untenurable period." Faculty unions understandably want a maximum period in order to prevent their members from being denied tenure consideration indefinitely for cost-minimizing reasons on the part of the university. But suppose universities had to repay the full amount of any entrance fee, with interest, when a faculty member is denied tenure and dismissed. Suppose further that spot wage is equal to spot productivity after adjustment for the "withheld" entrance fee. In other words, aside from the financial accounting idiosyncrasies, is there any reason to design a contract with a fixed maximum untenurable period? If so, what explains the universal nature of this practice?

To glimpse the rationale behind the provision for a maximum untenurable period, it is helpful to appreciate the distinction between a tournament and a race, whether in athletics or research. A race is a structure which awards the winning prize to the first individual or team to cross the finish line; that is, to achieve a given standard fixed in advance, such as running 100 metres, or discovering a fry pan that doesn't stick, or writing a program which scans Chinese characters, etc. The standard is predetermined, and the winner is the first to achieve the standard. A tournament is a structure which rewards the result judged best after a fixed time limit or fixed number of attempts, irrespective of the winning time or winning solution. The focus of the tournament is on quality "against the field," as it were. Again, the winner at Wimbledon is determined by the quality of play against the entered field in the tournament, and not some standard such as service breaks given up or aces served.

With this distinction as background, the rationale for a maximum untenurable period may be seen to involve university impatience. If tenure were merely a recognition for attaining some standard, it is possible that all tournament contestants will eventually be able to reach the so-called standard if given enough time. Without a time limit, there is no way of distinguishing those with higher ability since lower ability individuals can also achieve the standard because they never "run out of time." Further, lack of a time limit is incentive-incompatible in the sense that shirking will be a greater problem. A time-limited tournament is therefore designed to elicit information on quality rather than per-period research intensity (shirking held constant).

The fixed termination date of a tournament also has implications for the feasibility of tournament design. How impatient is the tournament sponsor with respect to knowing the winner? In economic language, how much less value is a decision or solution in future against having the result or solution immediately? For example, a solution for a research problem available only sometime in the next decade is worth much less (if anything) to those facing the problem now, just as the guaranteed payment of a $1000 next year is worth less than the value of that promissory note today. Economists refer to this issue as "discounting." In short, discounting is a conceptual marker for human impatience.

Now, without discounting, tournament sponsors would like the tournament to go on forever, or to be as long as possible. In the university context, this translates into an unlimited tenurable period for probationary appointments. But with near-infinite time limits, all contestants will meet or exceed the stipulated standard, and in the tournament context, they will all be "tied for first" and share the winning prize. If so, all "rents" to contestants will be driven to zero, and no positive entrance fee could then be conceivably charged to attract participants. The tournament, in fact, breaks down. Once more, the rigorous proof of this curio requires some mathematics (Taylor, 1995, pp. 880–881) but it is perhaps sufficient to note that fixed termination tournaments are common, that universities (and others) probably suffer from impatience. Accordingly, a maximum tenurable period is common, and appropriately so.

DESIGNER TENURE III: WHY UP OR OUT?

Why must those who are not granted tenure leave the university? In other words, why do universities not simply extend the employment of assistant professors who are refused tenure but under other arrangements? Perhaps these assistant professors might even be willing to accept non-tenurable employment at different pay? An explanation of this feature of the tenure process requires an examination of career hierarchies, and this is best accomplished by considering a two-period framework (Demougin & Siow, 1994).

If tenure is a meaningful screening process which separates faculty into two types, then untenured faculty and tenured faculty must be imperfect substitutes. That is, over a life time career, tenure faculty must be superior in productivity, somehow measured. Otherwise why have tenure at all? There would be no qualitative difference between tenured and untenured staff qualities and the entire institution would be meaningless. We must assume, therefore, that tenured status implies some productivity difference. Specifically, tenured faculty are those who are deemed to be productively superior to those who are denied tenure. It goes without saying that universities would always prefer to have tenured staff, meaning staff which displays higher productivity.

A university could choose to hire only tenured faculty from other universities (that is, "from outside"), but if there are significant hiring costs associated with this strategy, the university might prefer to develop its own senior faculty. For convenience, consider the career of an academic as comprising two periods: the first period is the pre-tenure or probationary period in which the university undertakes to train or nurture the career development of its junior faculty; the second period is the post-tenure period in which the university has judged that the faculty member is "successful" in the sense of promising future high productivity for the university, and is thereby granted tenure with expectation of promotion as well. The question is: Why must faculty members unsuccessful at tenure leave rather than continue their duties, even at frozen pay?

The reason why universities want tenured faculty is their superior productivity, and therefore their direct and indirect influence on the overall quality and reputation of the university. But because of high hiring costs to attract this type of labour, universities adopt a strategy of internal training of probationary faculty in the hope that successful "trainees" will be promoted to tenured status, thereby saving the university its hiring costs. Their own-produced senior faculty will then enhance the teaching and research reputation of the university. The situation is not dissimilar to other firms which have their own training programs, or indeed, athletic teams which have their own player development programs. Hiring costs, it must be emphasized, is a metaphor in this case for the reduced career-long output associated with having an untenured staff (lower productivity) perform the job of a tenured staff (higher productivity), and not just the advertising and search expenses, or the market wage of senior academics. If faculty lived forever, then the obvious best strategy for an university would be to stock its faculty only with tenured staff. But because this is not so, universities must engage in the hiring process to determine who are the best replacements for its faculty members, hence the selection and "training" of its younger untenured faculty. In effect, probationary academic staff are offered an opportunity in the first instance, not a guaranteed career.

But positions on an university faculty are scarce, just like slots on an athletic team. Given the university's desire for tenured staff (meaning higher productivity), and if the number of staff positions is limited, an unsuccessful candidate for tenure must be dismissed by the university for two reasons. First, if the candidate is judged as unworthy of tenure, the university cannot "save" or "recoup" its hiring costs in future. The candidate is unlikely to be promotable based upon ever higher standards associated with progress through the ranks to associate and then full professor. Second, even though the university cannot know in advance whether or not a particular probationary candidate will develop into a tenurable prospect, it operates on a sampling framework, meaning that it makes decisions based upon the available information and certain probabilities. Weighted against a calculated probability of securing a tenurable staff member, the assistant professor who is denied tenure for performance inadequacies is the less wise choice for the scarce job slot since retention virtually guarantees lower overall productivity for the university. Much like poker, you are allowed only a set number of cards. You must discard in order to receive new ones, even though there is no guarantee that the new cards will be better than the old ones.

It is important to be clear about certain assumptions made in the above argument, even though they may be uncontroversial. The above analysis holds only when the number of slots is either limited or when positions are scarce. This has always been the case for university faculty positions. Additionally, it is important to note that tenure applies only to that portion of the academic faculty who are considered probationary. By definition, probationary appointments are given a "training opportunity," thus requiring the tenure evaluation process, and thus requiring the up-or-out feature. For the very same reasons, non-probationary appointments are not subject to tenure standards, nor are they usually held to the same standards of performance or duties with respect to research, service, committee work, grant applications, etc. No university is immune from hiring mistakes. Therefore, the up-or-out rule of tenure design is also a method of limiting losses.

STANDARDS FOR TENURE AND PROMOTION

The generic issue of "standards" arises in almost all aspects of appraising university performance. The most familiar encounter involves professors setting standards for their courses, or more comprehensively, the university setting the standards for degrees or diplomas. Students meeting the minimum standard for a course get "credits," and those meeting the standard for the program of studies "graduate"; and it is hoped that this credential has economic value in the form of higher pay or better opportunities. The standard-setting process for students is actually no different when applied to university faculty themselves when it comes to determining who shall receive tenure, or who shall be promoted, for again, attainment of these standards results in material reward. The incentive question is again present, but this time one must ask it in a different guise: How high (or low) should the standard be set?

A simple model of educational standard-setting is set out by Costwell (1994) in the context of student effort and time. Here, we outline his model, making slight variations to account for the institutional features of university faculty practices. Costwell's model is based upon three assumptions: (a) the standard to be met is a binary credential; that is, a probationary faculty member either receives tenure or does not, or a professor is either promoted to the next rank or is not promoted, etc.; and (b) the standard is set by a group of policy makers according to their own view of the social good (social welfare). This asserts that the standard setter will be "independent" of outside consumer-type influence such as voters, politicians, or other such groups and finally (c) faculty choose whether to meet the standard or not. The context for setting standards is essentially similar to the screening/sorting model discussed above, because the problems are those of costly monitoring and performance measuring on a continuous basis, in particular the familiar difficulty of measuring individual productivity and paying corresponding wages. Having adopted the career-ladder structure and deferred-payment structure which typifies university practice, the issue now must focus on the standard, itself, for tenure or promotion.

Any standard, whatever its level, within the binary structure which attempts to associate pay and economic privileges (such as job security) by ranks will have incentive implications. Faculty will react to this standard (say, promotion to full professorship) by either "producing" with greater effort in order to meet this standard, or dropping off in discouragement. Alternatively, one may view the response in terms of acquiring more training or skills (human capital accumulation) for higher future pay. This interpretation is not unique to the university setting. For example, the vice-president of human resources for Macmillan Blodel Ltd. commented (ROB, *Globe and Mail,* Oct. 26, 1996) on the incentive structure of a flat wage structure for "promotion" in this way:

> Where's the attraction of taking an apprenticeship for four years to be a fully ranked journeyman electrician or carpenter, if you're going to move from $19 [Canadian] to $24 [Canadian] an hour? Is that worth it? In the United States, if you're looking from $12 [U.S.] to $24 and you see a 100-percent increase in your wage, it's pretty easy to imagine getting the gumption up to take an apprenticeship.

From the point of the standard setter, however, (hereafter, simply the university), the "marginal benefit of a higher standard is the increased productivity of those who continue to meet it, and the marginal cost is the reduced productivity of those who cease to do so" (Costrell, 1994, p. 957) To say anything more beyond this requires a more formal mathematical treatment, so we shall simply state some interesting results and attempt a heuristic explanation.

The first result of note is that egalitarian universities set lower standards, whether or not the university values faculty "leisure." A university which does not "value" faculty leisure in its conception of social welfare implies that all it cares about, and therefore values, is the faculty's work effort and productivity. To gain some intuition why egalitarian standard setters set lower standards, consider what happens when standards are raised. Those who continue to meet the raised standard will exert greater effort and become more productive, and hence receive higher pay. Suppose, just for argument, this is offset by those who are discouraged, so the university suffers as a result of their lesser effort and reduced productivity. These individuals would not receive higher pay otherwise forthcoming. But an egalitarian would place greater weight on the "losses" of those discouraged by the higher standard than the "gains" of those who meet it. Thus, egalitarian universities will set lower standards so that more faculty will meet it, and be promoted.

Now, to glimpse the effect of universities valuing faculty leisure rather than work alone, consider the following. Suppose the university values faculty leisure positively, and even to a greater extent than do faculty members themselves. No matter what the standard, there are some who will choose to meet it, and some who will choose not to meet it, and the faculty member who is "at the margin" is the one who feels indifferent between exerting additional effort in order to achieve the full professor rank and greater pay, and the alternative of exerting less effort but enjoying more leisure but less pay. But no matter how strongly that faculty member values leisure over extra work time, it is the university that sets the standard, not this individual faculty member at the margin. And the university views the marginal faculty member as better off if promoted than not. Therefore the egalitarian standard setter will lower standards to get that professor promoted. In sum, whether the university values leisure or not, egalitarians will set lower standards because:

> . . . the egalitarian places less weight on the utility gain (as measured by the standard setter . . .) of the inframarginal [faculty member] who would rise to

> meet a higher standard, and more weight on the losses of the marginal [faculty member] who would be discouraged by it. . . (Costrell, 1994:, p. 961).

Finally, reinterpret faculty work as "research" or "teaching and research" and consider "leisure" to be time and effort spent on community service instead. This will lessen the emotive impact of viewing "leisure" as pure shirking. Does the university value anything other than the productivity of "research" or "research and teaching" in its calculations? Is "service" totally overlooked, or undervalued? These questions concerning the relative valuation of different faculty activities are examined later. It is sufficient to note here that the setting of standards for some type of activity, say research and teaching, does not necessarily mean that the excluded activity (in this case, service) has no value, nor does it mean that standards must be set for that activity as well.

What this simple analysis of standard-setting demonstrates is that where only "coarse" information is possible about performance and productivity so that binary type decisions are adopted to focus on simply the distinction between "qualified" or "non qualified" individuals — such as to grant tenure or not, to promote or not — the implications for choosing that standard must be noted, even if one already has a well designed "self-enforcing incentive-compatible" career ladder and pay scale in place.

How do Canadian universities behave with respect to setting standards? Do universities with an egalitarian perspective set lower standards? This is a difficult question. Consider the standard for promotion to the rank of Full Professor. Let us assume that a indicator of "standards" is implied by the average number of years that a faculty remains in the associate professor rank before promotion, with longer duration as an associate implying higher standards for full professorship. Next, we need an indicator of "egalitarianism" that is independent of actual salaries enjoyed by incumbent faculty. Here, a rough indicator is the salary scale itself, not actual salaries. We suggest the crude indicator given by calculating the salary floor of the full professor as a percentage of the salary floor of an assistant professor, with the notion that universities are more egalitarian if they adopt salary structures with "low spreads" between top and lower ranks. We should therefore expect universities in which faculty spend shorter lengths of time in the associate rank (lower promotion standards) to display salary structures with lower ratios of full professor salaries as a percentage of the assistant floor (more egalitarian). Table 1 below lists the top five, and the bottom five, Ontario universities (in 1991–92) according to our indicator of standard level, and relates them to the measure of egalitarianism, using data reported by Grant (1993).

There appears to be no relationship at all between standard-levels and our indicator of egalitarianism. The average "egalitarian" score for universities with "high standards" is 154.8, and the average score for the "low standard" group is 157.6. The difference is not worth talking about, and it is unlikely that much more sophisticated statistical dredging will alter these results. So what does this mean? Admittedly, the universe of institutions considered is quite small, and the amount of variation in this population of universities is not very wide. But it would seem that Ontario universities are very similar in their attitude

Table 1
"Standards" versus "Egalitarianism": Ontario Universities 1991–92

University	Years as Associate (Indicator of Standards)	Professor $ as % of Assistant Floor (Indicator of Egalitarianism)
York	10.9	154
OISE	10.7	144
Western	10.3	152
Carleton	10.3	165
Windsor	9.9	159
		Average = 154.8
McMaster	8.0	164
Guelph	7.9	165
Lakehead	7.7	158
Brock	7.4	154
Ottawa	6.8	147
		Average = 157.6

towards pay structures, and that Ontario universities are also very conscious of setting standards that are reasonably comparable across the entire community of universities in Ontario. This fact is indeed encouraging for those who wonder whether or not university faculty are similarly qualified when considering their rank at different universities. There appears to be no evidence that they are not! But perhaps this is due to the fact that all Ontario universities are similarly sympathetic when it comes to egalitarian philosophies.

FORTIFYING THE GARRISON: EXTERNAL THREATS

Northrop Frye's metaphor of the Canadian garrison mentality is obviously at work in the response of university faculty when defending tenure. Tenure is asserted as the fundamental safeguard of academic freedom, which includes the freedom to pursue independent inquiry without fear of reprisal or direction from such outside powers as the church, government, the public, business lobbies or other special interests, and the like. What these threats all have in common is that they are all thought to be "external" to the autonomy of the "modern" university; and a university's faculty must be free to pursue truth as they see it and succumb neither to minority viewpoints nor the "political correctness" of the day.

Even a cursory examination of the histories of Canadian universities (or older universities like Oxford, for that matter) will reveal how relatively recent is such a view. Many of Canada's smaller and oldest universities were founded by, and continue to be connected with, the church. Mount Allison University is a case in point, and is regarded as one of Canada's finest (at least by its alumni and *Maclean's* magazine). Elsewhere there is variety. Before World War I, Queen's University suffered little religious controversy because the "moral leaders of [that] university were strong advocates of critical inquiry and firm opponents of dogmatism." On the other hand, McMaster University suffered great "strife," as there developed "a major rift . . . within the religious and academic communities" over the issue of "modernism in general university instruction" (McKillop, 1994, pp. 208-209).

These conflicts were about the very idea of the university and its proper place in society. In time the battle would eventually involve the corporate and government sectors as combatants rather than the church, and become centred around individuals, or rather particular individuals. In May 1919, the principal of Queen's University, Bruce Taylor, addressed the graduating class of the University of Manitoba a week after the Winnipeg General Strike had begun. Without overt reference to the current situation, he remarked that academic freedom, like industrial relations, was now inescapably linked to the increasing role of the state. He acknowledged Queen's University's gratitude for state aid, but asked the all important question; ". . . if the State support a University, is the State entitled to control . . . the University?"[12]

Principal Taylor was probably aware of Thorstein Veblen's harsh indictment of business domination of higher education and singled out the precarious plight of the political economy professor who "must make his conclusions conform to the ideas of [those] who occupy a seat on the governing board. . ." (McKillop, 1994, p. 365). These words would prove prophetic when R.W. Leonard, a millionaire philanthropist and board of governor of Toronto and Queen's universities sought to curtail the teachings of Professor R.M. MacIver on account of his views (about labour and capitalism) and service activities (with workers' education associations). Robert Falconer, president of University of Toronto, defended Professor MacIver and academic freedom tactfully and skillfully, but it cannot be known how much self-censoring and deliberate silence resulted from the MacIver episode.

If MacIver's views offended the corporate sector members on the board of governors, Frank Underhill inflamed the government of the day with his writings. His "left leaning" sympathies, his so-called "softness" on Germany, his political activism, his criticism of R.B. Bennett's promise to move Canada's tariff in the direction of imperial preference, — all these, combined with his often sarcastic style, led to the judgment by many that Underhill was tactless and disrespectful. He also broke his word, it appears, when he promised to give no more talks for a year but did so anyway. Further, given the climate of the times in the late 1930s, Underhill's writings, speeches and outspoken commentaries, could be held to border on sedition. Toronto newspapers called for his dismissal by name, but a student petition defended Underhill's right to free speech, and Harold Innis and Dean of Arts Samuel Beatty spoke on behalf of faculty opposing any attempt to fire Underhill. According to McKillop (1994, p. 398), it was President Cody's own position that saved Underhill, for Cody had earlier made some favourable remarks about Mussolini's fascist Italy that now appeared very unfashionable; and ". . .Cody was no more a fascist than Underhill was a communist. (Ibid., p. 392).[13]

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[12] My reporting of this episode, and the subsequent interpretations respecting R.M. MacIver and Frank Underhill draws entirely on A.B. McKillop's authoritative history, *Matters of Mind: The University in Ontario 1791-1951*, particularly Chapter 14.

What lessons are we to learn from the historical episodes involving MacIver and Underhill? There was no tenure involved in the modern understanding of a legal contractual arrangement. What the above brief sketch reveals is that threats from outside the garrison walls do exist and are not entirely imaginary. In economic language, if the social benefits of a university are to include the production of new ideas, inventions, creative works, as well as training the next generation of critical thinking students, the university can fulfill its purpose effectively by having the "option goods" of free speech and academic freedom.

Tenure, therefore, should be viewed, as a public good and not as an individual privilege for certain academics. Like all public goods, the costs of provision (of tenure) are plain and easy to state in terms taxpayers understand, or so it is thought: it costs universities more for its faculty, there is no flexibility to get rid of redundant (or disagreeable) staff or programs, it is a barrier to effective down-sizing, etc. But unfortunately, the benefits of public goods are also hard to conceive for the average tax payer — especially when the benefits of tenure are only understandable in terms of long-career contracts, life-time incentives, and such abstract notions like "free speech" and 'academic freedom," which only take expression of value when rendered as what the economist call the "option demand," the right to purchase the good rather than the good itself. Free speech is not only valuable when I want to make a "particular utterance"; it is valuable even when I wish to be silent, for its value stems from the assurance that I have the option to make "any utterance" I choose. Tenure, on this interpretation, is a very cheap price to guarantee maximum option demand, where the commodity in question is "new ideas." It may well turn out to be cheaper for society to pay the pre-committed price of the option to guarantee future delivery than to pay the spot damage costs at a later date.

As governments seek to gain more control over university affairs, on the claim that the piper generally gets to pick the tune, it is the very tone of the piper that is troubling. By unthinkingly trashing tenure to the point that its very *raison d'être* is threatened, the piper should not expect much new music. Unfortunately, it is the wider Canadian audience, not the piper alone, that will have to suffer the silences.

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[13] Severe cuts to university financing occurred at this time (1935 through 1939) but no causal link should be carelessly claimed. The depression had lasted for years and government finances were not buoyant, especially towards "unpatriotic" professors.

This section examined the role of tenure as a pre-commitment against external threats. But what benefits accrue to the university inside the confines of its ivy walls? This is considered next.

STEMMING PALACE INTRIGUE: INTERNAL CHALLENGES

If the garrison image conjures up an image of university faculty defending their autonomy against outsiders who cannot be trusted to wish the university mission well, we might ask what takes place behind the walls themselves; that is, within the ivory tower of the palace. What role does tenure play among members of the academy, and how does it affect their performance and productivity?

Again, it is probably instructive to recall a specific historical episode. The Crowe case has now taken on a certain mythical status for Canadian academics. There is no need to recite the history here as more authoritative accounts are to be found elsewhere. But the events and key personnel need to be mentioned before commentary. H.S. Crowe was a member of the teaching faculty in History at United College, the forerunner of the University of Winnipeg. In 1953 he was also an active founding member of a local branch of the Canadian Association of University Teachers (CAUT), which was previously formed in 1951. United College was one of only three United Church maintained universities (the other two being Mount Allison and Victoria) at the time when its new principal, W.C. Lockhart, was installed in 1955. The concept of "secular education" as distinct from one that can ". . .only be nurtured and sustained by a positive and dynamic Christian faith" was attacked in Lockhart's inaugural address. (quoted in Bedford, 1976, p. 298). But it was to be a letter that would lead to ugly rumours, conflict between faculty and governing board, unflattering press coverage, and CAUT's first experience in intervention.

A letter written by H.S. Crowe from Kingston to a colleague in the German department, W.A. Packer, never arrived but finally re-appeared in a sealed envelope addressed to Dr Lockhart, with a cryptic note commenting on staff loyalty. Lockhart wrote to Crowe to say that he was forced to conclude that Crowe had neither sympathy with the College's purpose, nor loyalty to the administration. There the matter might have ended. But rumours circulated that Principal Lockhart was steaming open faculty mail, etc. Eventually, there was faculty discussion, official explanations, media frenzy, factions among faculty taking different sides and views, governing board attempts to sack Crowe, student commentary, threats to sue, reconciliation attempts, CAUT intervention while making up its procedures for the first time, a committee of investigation, faculty resignations opposing the new Dean of Arts and Science, Crowe appearing on national television, offer of reinstatement, refusal of reinstatement, call for a judicial inquiry, and so forth. The matter "ended" when on December 13, 1958, the Board of Regents amazed all with a brief announcement that Crowe was to be reinstated effective immediately. Crowe accepted without public comment.[14] As for Canadian academics and the tenure issue, it was acknowledged that this was CAUT's first experience, which "spurred the association to formulate rules of procedure, [and] to issue a statement on tenure and freedom . . ." and "that [this episode] must never be duplicated" (Bedford, 1976, p. 329).

With the Crowe case as background, how does this episode illustrate or inform an economic perspective on employment contracts, particularly tenure? How does an incentive-compatible contract design emerge from this experience? Anyone reading the fully-detailed events surrounding the Crowe case cannot help but wonder what all of this turmoil was doing to the normal university functions of teaching, research and service. There were many "influencing activities," to use Milgrom's phrase. (Milgrom, 1988)

An organization might seek to design a structure which limits managerial discretion under circumstances when the potential benefits of control are slight, and the influence costs are great. Milgrom's analysis is in terms of wage compensations, working conditions, and the like, but the insights apply equally to tenure in the university. Employees (in this case, faculty) care about the decisions made by management besides their individual wages, and so will spend time and energy trying to "influence" them. If time spent on influence activities is diverted from the main enterprise activity (say, teaching, research and public service), then overall productivity will suffer as a result of this "office politicking," which is assumed to add nothing to university output. The enterprise (in this case, the university) may well be indifferent to outcomes resulting from influence activities if it has little or slight impact on productivity performance, such as might be the case when individual faculty lobby for preferred time slots in their teaching schedule, or preferred locations for offices, or even course allocations, as long the courses are taught by the appropriate faculty. Like the example cited by Milgrom whereby airline flight attendants bid for their preferred routes with conflicts resolved by seniority, university administration above the department level cares little (or should care little) about which professor has a particular departmental office space, or teaches in which scheduled time slot, — provided the entire curriculum is competently delivered by qualified members of the department. However, individual professors themselves care a great deal, so it is appropriate that influence activities be allowed at the departmental level. Indeed, if university vice-presidents were involved in determining individual teaching assignments, not only would this be interpreted as interference, senior administrators couldn't possibly accept all the lunch invitations tendered.

There are, however, two key "parameters" governing the optimal limitation of managerial discretion, one being the importance of the decision to the overall organizational goal, and already discussed. The other key factor concerns the redistribution potential of any change. That is, even if the organization has little interest in a particular change, that change might have large and serious redistributive consequences for those directly involved. "In an efficiently designed organization, management will be allowed no discretion over those decisions. . ." (Milgrom, 1988, p. 45). Take the case of university faculty. It is likely the case that university management does not particularly care whether it is Professor A or Professor B that teaches a particular course, if both are qualified. And if one of the two professors must be replaced when either quits or is fired, the university might not even care whether it is Professor A or Professor B who leaves. But these decisions are extremely important to Professors A and B, and the second decision has potentially large redistributive effects. For example, Professor A might "lobby" to have Professor B "fired," and Professor B might try to influence the promotion (or termination) of Professor C in order to apply for the now-vacant position. On the assumption stated that none of these activities affects university output positively (namely, better teaching, research and service), there is cause not only to limit managerial discretion but also a good case to be made that such office politicking should not be allowed. In an academic setting, the institution of tenure plays a key part in limiting this non-productive activity for it is now pointless to attempt the dismissal of colleagues for frivolous reasons.[15]

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[14] More detail is available in the official history by A.G. Bedford, *The University of Winnipeg: A History of the Founding Colleges*, Chapter 11.

It is important to note that the institution of tenure is a particular type of response designed to curb unproductive influence activities. One could simply try to close down the communication channel of influence (The president is not available for a lunch meeting, ever); or the compensation schedule and decision process could be adjusted, perhaps at great cost (Pay full professors more than academic vice-presidents, and require vice-presidents to have a full professor's signature before travelling). Tenure, then, is a response predicated on institutional pre-commitment. In other words, the organization attempts to ". . . reduce the returns to influence activities by committing themselves in various ways that limit their discretion and constrain their ability to respond to the information supplied by others" (Milgrom & Roberts, 1988, p. 157). In this fashion, the ivory tower tries to keep "palace intrigue" to a minimum. As Shakespeare once wrote:

> Then happy I, that love and am beloved
> Where I may not remove nor be removed.

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[15] Individual tenure rights and managerial rights respecting team makeup are not always synonymous. For example, the decision to exclude Carl Lewis from the 1996 US Olympic 4 X100 men's relay finals was made by the coach-manager, not the team members themselves, some of whom even suggested Lewis as a member. On the other hand, it is inconceivable that members of a successful string quartet would not decide on a replacement collegially. The difference is probably explicable by economists in terms of the mode of production. The performance quality of the string quartet is a joint and inter-dependent product, requiring all members to "work together." On the other hand, the 4 x 100 relay is really a sequence of individual performances; the only consideration is the smooth handling of "changing job shifts." The Canadian Gold Medal in this event has nothing to say about tenure.

A GERMAN POSTCARD[16]

Previous sections presented a stylized description of the academic career ladder, wage structure and standards, of Canadian universities. It is of interest to note that universities in other countries do things differently. Consider, for comparison, the hiring process and career ladder in Germany.[17]

Candidates for a position as professor require a doctorate; this being the Dr phil., Dr rev. pol., Dr rev. nat. or Dr med. depending upon the discipline. In addition, candidates require an additional qualification, the *Habilitation* or Dr. phil. habil., which may be regarded as a second doctorate. Typically, the *Habilitation* requires a further four or five years to complete and to defend as an unsupervised "thesis"; it is therefore essentially an act of independent scholarship subject to peer review.

There are also age restrictions governing entry to tenure-track academic ranks. Normally, the candidate must not be more than 45 years of age. Candidates from outside the university sector who seek appointment to a full professor position, or those within the university system who do not already possess a C4 position (see below), may be older than 45. In these cases, however, the candidates will require ministerial approval.

There are essentially two academic tracks or streams in German universities. One is the professorial track with three types of positions, referred to as C2, C3, and C4 according to the position in the pay scale. The positions C3 and C4 are roughly equivalent to the Canadian ranks of associate professor and full professor respectively. Promotion usually entails accepting a position at another university institution, rather than ascending a career ladder at one's present university. Occasionally, there is promotion from C2 to C3 at one's own university; however, a promotion from C3 to C4 is very uncommon, and would require special "explanation." As a rule, this is only possible if the candidate has been offered a C4 position at another university. It is not necessary to have held a C2 position to move into a C3 position, or to have held a C3 position to obtain a C4 position. The "rank" obtained by a candidate depends upon the positions that are available.

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[16] My original intent was to compare university faculty situations in Canada and Germany. I have concluded that this is unrewarding because university structure and practices in the two countries are located within entirely different scholarly, social and cultural traditions. Further, as I hope to show, it is quite misleading to compare similar-sounding practices such as "hiring a faculty member" or "promotion to full professor" in both countries without sensitivity to the entire structure. What appears as quaint or arbitrary differences when examining aspects in isolation may make perfect sense when viewing the university "system" as a coherent whole. Although it is always intellectually profitable, and enjoyable, to examine the academic terrain of other countries, often this constitutes no more than the impressions of a tourist. Hence, this postcard. I am indebted to Prof. Hans Braun for information and guidance in understanding the German academic system.

[17] When the British House of Commons appointed a Royal Commission to investigate the state of universities in 1850, Oxford traditionalists feared the betrayal of English academic methods to the German style of scholarship. C.L. Dodgson (1832–98), better known as Lewis Carroll, satirized: ". . . all that is good comes from the German. Ask our men of science: they will tell you that any German book must needs surpass an English one. . . No learned man doth now talk, or even so much as cough, save only in German" (Morris, 1978, p. 243). But much earlier, the British classical scholar Richard Porson (1759–1808) wrote: "Life is too short to learn German" (McPhee, 1978, p. 108).

The other academic stream is called the *akademischer Mittelbau.* Persons appointed in the *akademischer Mittelbau* stream teach and conduct research. Formally speaking, these individuals are "directed" by a professor; however, this is not always the case. Most people in the *akademischer Mittelbau* hold temporary positions, although some have tenure-track appointments. However, it is tenure in their rank, not in the professorial rank. Although some individuals in the *akademischer Mittelbau* may hold the *Habiliation,* they will still remain in the *Mittelbau* if they are not offered a professorial position at another university.

A key feature of the German system centres around the practices concerning application for an academic position. Only under very unusual circumstances is it possible to apply for a professorial position (at any rank) at one's own university. Typically, the hiring process is as follows. After the prescribed advertisement of a vacant position, a search committee is established comprising professors of various ranks, representatives of the *akademischer Mittelbau* and students. The professors must be in the majority. This committee creates a short list of three (or possibly more) candidates and ranks them, normally by secret ballot. This committee ranking is then passed on to a faculty council which approves, amend, or changes the ranking, also by secret ballot. The procedure is repeated by the academic senate by secret ballot too. Finally, the department of higher education receives the ranking; and the Minister offers the position to one of the three nominees, in most cases the top ranked individual but formally, the Minister is not obliged to do so.

Salaries of German academics are determined centrally according to a "civil service" scale and not by individual university administrations. Increments are given every two years automatically up to around the age of 50. "Tenure" (in the Canadian sense) for professors is granted at time of hiring. Retirement is mandatory at age 65 at 75% salary. Under special circumstances, an individual may receive a post-retirement appointment, but only until a replacement is hired. The pension is determined by last salary earnings. There is early retirement only for medical reasons, but no "buy out" provisions. The pensions are non-contributory; that is, professors and tenured people in the *akademischer Mittelbau* do not have to pay into a pension fund.

In comparison with typical Canadian university practice, it appears that there is much greater scrutiny effort and higher standards imposed at the hiring stage in German universities. Indeed, since appointments to the professorial track require the *Habilitation,* and are made "with tenure," German universities essentially collapse the separate hiring and tenure stages of Canadian universities into one. The *Habilitation* is essentially the equivalent of the standard of scholarship and achievement expected at the end of the "probationary period" for a Canadian academic, albeit as an independent scholar. However, in German universities, the habilitation is a necessary, but not sufficient, qualification for professorial rank.

There is also recognition of differential ability or professional ambition in Germany through its screening and appointment mechanisms. One interpretation might be that German universities realize that a "too precise" separating equilibrium is extremely severe for its overall academic goals; hence also, the two doctorates. German universities hire for a particular position (specific discipline and specific rank) rather than a particular individual (specific discipline, but any rank). This practice is also common in other countries, such as Britain and Australia, especially at the full professor rank. The overall procedure in German universities is more formal, codified, and uniform across universities when compared to individual Canadian universities, a situation arising, perhaps not surprisingly, from the more evident civil service culture in national hiring regulations. Indeed, it is only in the context of a national perspective and the desire for academic mobility that one begins to understand the ban on German universities offering positions to their current staff.[18] Here, it is instructive to point out an element of irony. Canadians pay lip service to the virtues of market forces while believing European countries like Germany to be more institutionally rigid and hierarchical. So how should we determine which academic should become a full professor? Canadian practice accommodates promotion through ascending a job ladder, often with procedures and standards that are peculiar to that particular university. German universities, on the other hand, require that a promotion to full professor be validated by an outside third party (the hiring university other than one's own); in this sense, there is a "market test" of all candidates who claim that they "deserve" to be full professors. Furthermore, accession to full professor in Germany is the result of winning a "promotion tournament," whereas in Canada, it is more akin to merely meeting the local interpretation of the Olympic standard. However, this point should not be stretched too far, as the title "full professor" in Canada is merely a job classification category for university faculty whereas in Germany, which has a more communitarian culture and a different attitude towards universities, the title "full professor" conveys a certain social standing befitting the positional-good nature of the appointment.

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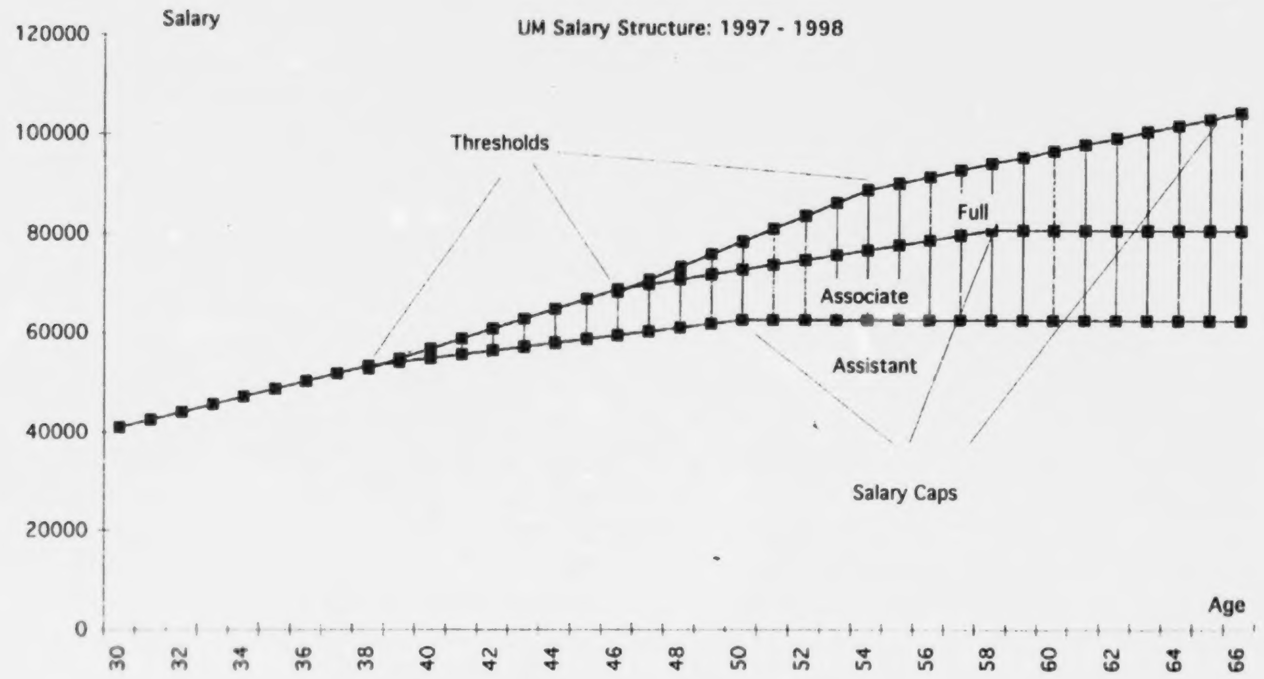
[18] It has been suggested that German professors might collude whereby Professor A is put on the short list for a position at Professor B's university for future consideration, such as the next time there is a position at A's university. Professor A can now go to central administration and bargain for a higher salary to stay. I had originally thought that true revelation of preferences might be achieved by making professors accompany the outside offer with a non-withdrawable letter of resignation, and constraining the university either to match the offer or accept the resignation. However, the situation is much more complicated than a simple game theory formulation, since Professor A can always discuss" informally" the possibility of an outside offer, and the university can always pre-emptively make an offer to remove outside temptation. In short, there is always relevant information not contained in the offer, and credibility of the threat comes into play. For example, the university may know that Professor A grew up near Frankfurt, is passionate about the wines of the Moselle, loves to vacation in southern France, does banking in Luxembourg, and has elderly retired parents living in Koblenz. How credible is a threat from this professor to relocate to Rostock?

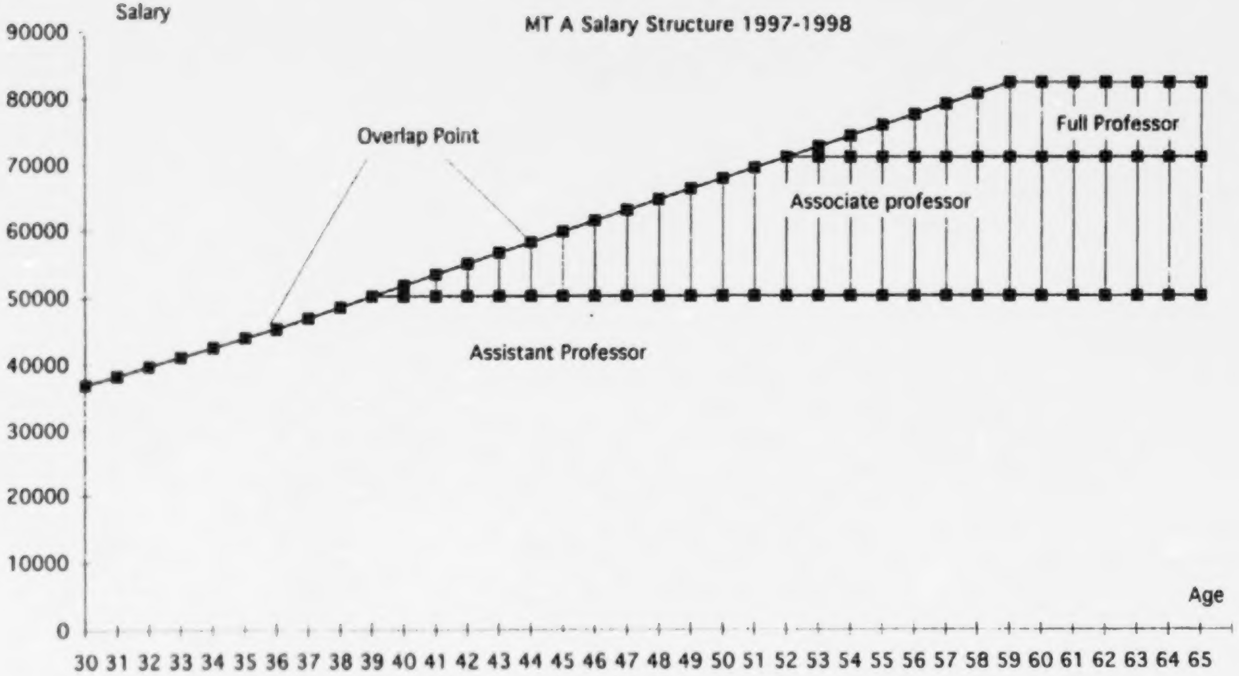
A PEEK AT SOME SALARY STRUCTURES

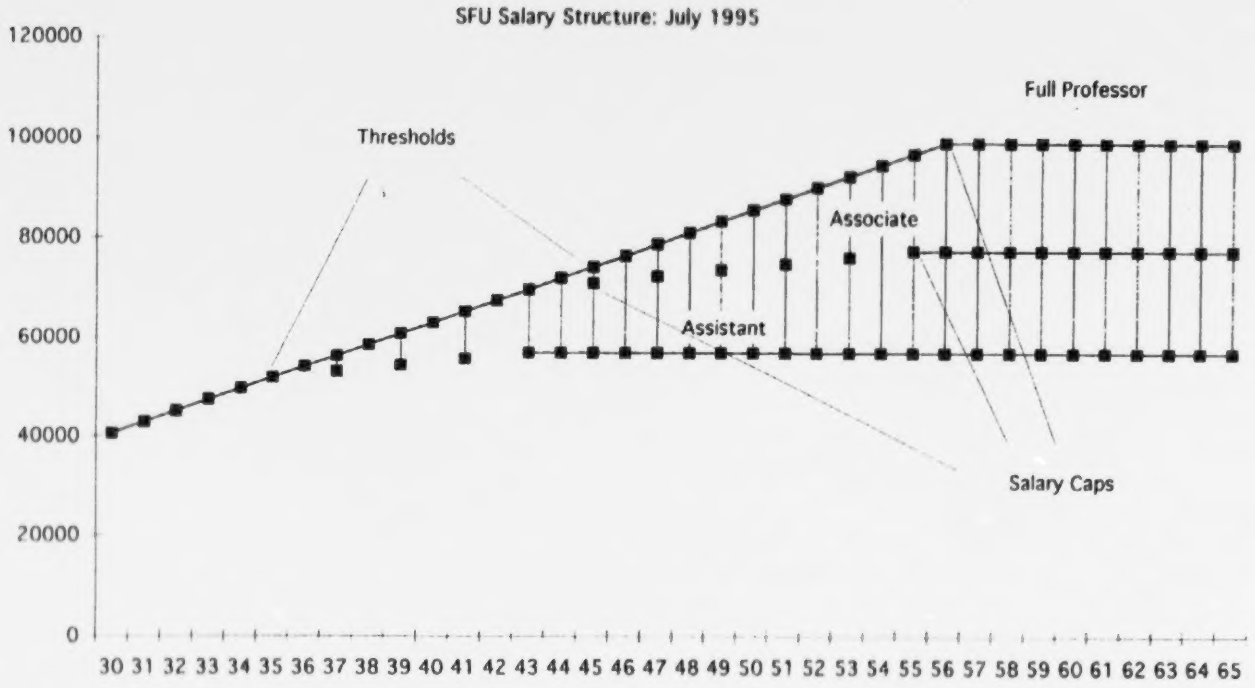
Grant (1993, p. 1) is certainly correct when he writes: "If the level of academic salaries in Canada receive insufficient attention, their structure is virtually ignored. Every Canadian university has adopted formal salary policies and procedures — including salary floors and ceilings, annual career development increments, merit pay and market supplements — specifying the conditions governing how faculty members are paid. . ." Grant's study concentrated on describing the different kinds of salary structures that exist in Canadian universities, and provided a useful taxonomy. Salary structures are either aristocracies or meritocracies. Aristocracies have overlapping salary schedules with ceilings specific to ranks; career progress increments which decrease, remain constant or increase with rank; and no merit pay. In contrast, meritocracies have flexible salary schedules with ceilings replaced by salary break points, career progress increments unrelated to rank but typically declining with seniority, and discretionary merit awards which constitute a significant part of career salary progress. There are also Canadian universities which have salary structures which combine features of aristocracies and meritocracies. Simon Fraser University is an example; it is a pseudo-meritocracy according to Grant (1993, p. 55) since the salary structure has floors and ceilings, overlapping schedules, but also merit awards which allow faster progress through the ranks.

In universities with a meritocracy salary structure, the degree of "incentive compatibility" will obviously depend upon the nature of the merit system. The more numerous, and larger, the possible rewards for doing "well" or doing "better," the more strong is the incentive for extra effort and higher productivity. Consider the salary structure of three universities; two with aristocratic-type salary structures (that is, no merit awards), chosen totally arbitrarily: Mount Allison University and the University of Manitoba; and Simon Fraser University, a "pseudo-meritocracy" (with merit awards). Mount Allison is a small liberal arts university in Sackville, New Brunswick with a faculty of 134 in 1991–92; its orientation is towards undergraduate teaching. It achieved the top overall ranking in *Maclean's* 1996 rankings of universities in the "primarily undergraduate" category. The University of Manitoba is a large comprehensive university in Winnipeg, Manitoba with a faculty of about 950 in 1990–91; in addition to teaching undergraduates, it also has medical, law, professional schools and many doctoral programs. Simon Fraser University is a medium size institution, with a staff of 536 in 1991–92. It has both undergraduate and graduate programs, but no professional schools such as medicine or law. It achieved the top overall ranking in *Maclean's* 1996 rankings of universities in the "comprehensive" category, meaning those universities with a significant amount of research activity and a wide range of programs at the graduate and undergraduate levels. How "incentive-compatible" are the salary structures of these three universities?

The salary structure for Mount Allison reveals overlap between the ceiling of one rank and the floor of the next higher rank, and ceilings for all ranks. The career progress increment is the same throughout all ranks. Since there is no merit increment, faculty of all ranks receive the same pay increase regardless of annual performance, as long as it is


UM Salary Structure: 1997 - 1998
Salary
120000
100000
80000
60000
40000
20000
0
Thresholds
Full
Associate
Assistant
Salary Caps
Age
30
32
34
36
38
40
42
44
46
48
50
52
54
56
58
60
62
64
66


Salary
MT A Salary Structure 1997-1998
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Overlap Point
Full Professor
Associate professor
Assistant Professor
Age
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65


SFU Salary Structure: July 1995
120000
100000
80000
60000
40000
20000
0
Full Professor
Thresholds
Associate
Assistant
Salary Caps
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65

judged satisfactory. The incentive to deter shirking or foster excellence is entirely concentrated on the "payoff" from promotion since promotion is the avenue to avoiding a salary cap. Even so, full professors are also subject to an eventual cap. In sum, Jack and Jill climb the salary hill at the same rate, regardless of rank. And if an associate professor is willing to sacrifice seven annual increments, there is no incentive to perform at a level which leads to promotion to full professor.

The University of Manitoba has a slightly different salary structure. There are salary floors for all ranks, and caps for the assistant and associate ranks.[19] Unlike Mount Allison, the University of Manitoba awards career progress increments which increase with rank. However, there are also thresholds for each rank, at which point the amount of the career progress increment decreases until the salary cap is reached. Chart 2 illustrates the salary structure of the University of Manitoba for 1997–98 on the assumption that promotion to the next rank occurs at the threshold level in order to highlight the feature of "up or lower pay increase." Salary floors for a rank are set at the threshold of the lower rank. The message implied in the University of Manitoba structure is clear: until the threshold is reached, faculty are expected to perform to the best of their abilities, and are rewarded accordingly; at the threshold, faculty are expected to have achieved a level of performance that would normally warrant promotion to the next rank. If so, faculty are rewarded with higher amounts of future increases, and if not, then faculty receive the message that future increases will be less. There is therefore "reward" for increased effort, and "penalty" for less than expected performance.[20] But because increments for full professors are larger than those for associate professors, the salary "spread" between full and associate professors can grow over time. It appears then, that the salary structure of the University of Manitoba is relatively more "incentive compatible" than that at Mount Allison University, because increasing the spread between ranks should encourage effort to gain promotion. (See the quote in the *Globe and Mail* previously cited.)

Simon Fraser University has a salary structure that appears, at first glance, to be similar to the structure at Mount Allison. Although the increments are nominally identical for all ranks, there are thresholds at which the annual increment is a "half-step" rather than a full step, and merit increases allow the more productive professors to progress through the ranks at a quicker pace. Again, the message is clear: promotion is expected at the threshold point, otherwise there is a salary penalty in the form of lower annual increments. However, since full increments are identical for all ranks, the motivation is achieved by encouraging faster promotion, rather than higher increments associated with higher rank.

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[19] Technically, there is also a cap on salary for Full Professors, but since this cap is reached at age 65 or 66, it is typically not binding. But as the University of Manitoba lacks a mandatory retirement provision, the cap is a small blessing.

[20] The University of Manitoba design is reminiscent of comments one usually hears when public discussion takes place about reforming our tax and transfer system; namely, to encourage the rich to produce more, one must give them more money, and to encourage the poor to work harder, one must give them less money.

This can be glimpsed in another fashion. By inspecting the salary structures of Mount Allison University and Simon Fraser University, it is apparent that the "spread" between the full professor cap and the associate professor cap is larger for Simon Fraser University.

Some persons (mainly economists, one suspects) may object at this point that the only appropriate way to calibrate incentives associated with promotion is to measure the life-time differences in financial benefits from achieving one rank relative to not achieving the rank. In the jargon of economics, it is the difference in net present values associated with the two ranks that matters, and not the way in which this difference is paid, whether in terms of increasing, constant or decreasing career progress increments. There is, of course, literal truth to this view. But if not all professors are so forward looking, or have lengthy time horizons, or are such astute accountants ever cognizant of changing interest rates, then there may be strategic merit in signaling the rewards for promotion independent of the total dollar amounts given over the period spent in rank. In any case, all things being equal, paying professors a bit of their reward "up front" on the installment plan is likely more "incentive-compatible" with respect to encouraging greater effort.[21] Otherwise, if the "hardcore" economics viewpoint that only the difference in net present values matters, one might expect to see pension rewards based upon rank but flatter salary schedules. It is hard to accept that professors would be indifferent as to when they received their financial rewards.

DEPARTMENT MEMBERS AS TEAM PLAYERS

The common practice in Canadian universities is to arrange groups of teachers and scholars in departments by discipline. There is usually a departmental head or chair who is from the same discipline; and this person is nominally responsible for allocating resources within this departmental unit, determining teaching assignments, monitoring faculty activities in this department, adjudicating student and faculty grievances, etc. More importantly, the head or chair often has *ex officio* standing with respect to such matters as hiring, tenure and promotion decisions as well as merit pay (if it exists). Even more important is the potential role of the head or chair in representing the interests of departmental members, including bargaining with more senior management for higher budget or staff allocations. Even with a collegial structure of departmental committees, the department head or chair is the closest approximation to the notion of "line manager" or "supervisor" there is within universities. Above the level of the departmental structure are academic officers such as deans (and their associates), academic vice-presidents or provosts, and others, who collectively comprise what may be termed "academic administration." The term academic administration is used to draw a rough distinction between those responsible for monitoring the delivery of teaching and research services, and those responsible for administering such non-academic services as physical plant, food services, student housing, payroll and grant administration, etc.

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[21] Grant (1993, p. 68) has simulated the difference in lifetime career earnings between a "career associate" and an "achiever." A career associate receives normal increments and is not promoted to full professor rank. The achiever is promoted to full professor after 6 years and receives merit increments at twice the average rate. The "spread" can be indicated by the ratio of lifetime earnings for the achiever and the career associate. This ratio is 1.03 for Mount Allison, 1.07 for the University of Manitoba, and 1.21 for Simon Fraser University, again indicating the structures at Mount Allison and the University of Manitoba is relatively weak in terms of incentives *vis-a-vis* Simon Fraser University.

The notion of tenure is an individual attribute, in the sense that incentive structures are designed to motivate individual effort and minimize individual shirking. So too is the practice of promotion, and merit pay. In short, it is individualism with a vengeance. Rather than group effort and productivity being maximized, it is individual achievement that is rewarded. Further, there are no or few undesirable consequences if a colleague shirks. There exist, then, what may be called horizontal incentive-deficiencies, and vertical incentive-deficiencies. Horizontal deficiencies arise when colleagues see no gains from cooperation to exploit complementary skills to achieve scale economies. Increasingly, research effort requires a combination of specialist skills. Further, the output is often super-additive in the sense that the joint product of two collaborators is significantly superior to (qualitatively different from) that which could be produced by two individuals working in isolation, but each given double the individual's resources.[22] Incentive structures which fail to promote this kind of behaviour, however efficient it may prevent individual shirking, are sub-optimal because they fail to address the problem of opportunities foregone. By failing to foster the set of "smart coalitions," the reward-geared-to-individual-productivity structure is harmful to excellence and collegiality.

Part of the difficulty arises from the extreme "independent" nature of individual rewards — rather than acknowledging that, in some cases, the department is not so much a motley collection of academic individuals but rather a immaturely-formed "team." Some faculty may wish to run as individuals in the 100 yard dash; others may want to form in teams for the 4 X 100 relay, as well. Both contests are worthy, but different, challenges. What this implies is that universities respond by introducing some novel incentive structures. Details will vary from scheme to scheme, but it is important that some legitimacy be accorded the departmental unit in addition to individual performance. For example, merit bonuses could be awarded not only to individuals, but to departments as well, leaving for the moment how this bonus is to be divided among departmental members. A reward structure augmented in this fashion should induce more collective effort if there are fruitful coalitions to be had.

The flip side of the "market failure" to deliver collaborative effort is the absence of accountability for the actions (or inaction) of others, including departmental colleagues.

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[22] There is a well documented increase in co-authorships in economics. Two hypotheses are possible. One is that intellectual gains are possible through specialization and division of labour. Another is that collaboration is of the mentor-protege kind. By examining the age distribution of co-authors, Laband and Piette (1995, p. 34) conclude that "... intellectual mergers ... involve individuals who bring roughly equivalent, complementary productive capacity to the relationship." In other words, collaboration is typically between similarly aged and similarly skilled scholars.

While there may be benefits foregone by non-collaboration, there are no sanctions for poor-quality effort or poor-quality decision making. "Independence" also means that faculty can be less vigilant about the work of colleagues, give less than best effort in constructive criticism, be unwilling to share teaching tips, or information about possible grants or the latest literature — the list goes on. Independence, in this context, co-exists with the separation of effect from responsibility, thereby creating vertical and horizontal incentive deficiencies. The point can be made more sharply by focusing for the moment on the responsibilities of department heads. Since the head has more information and power, at least temporarily if not permanently, the head can be held accountable for the output of departmental members. But, if department members have tenure, it will be argued that this authority is nominal rather than real. Furthermore, the head has little leverage over faculty with tenure, who jealously guard their right to work alone. Besides, it is virtually impossible to ascertain whether an individual faculty member is exercising careful measured judgment and proceeding with a program of research in a slow but deliberate manner, or alternatively, exerting a degree of effort which just complies with minimum standards of performance. If, as we have argued, it is difficult to measure individual output, which then justified resort to tenure practices and wage profiles steeper than productivity, it would seem nearly impossible to hold administrators accountable for faculty actions incapable of discernment between those arising from shirking, and those yielding inferior results due to the difficulty of the research being conducted.

Here, one might wish to consider amending the reward structure in accordance with recent insights from the theory of teams. With some violence to subtlety, the structure essentially involves making individual rewards conditional not only on the team's success but also on the individual's contribution (or vote, if it is an indivisible good like a yes-or-no decision) (Karotkin & Paroush, 1995). More specifically in the context of the university, bonuses (in addition to individual salary increments, of course) are awarded to departments as a whole, either through rank-order tournament among departments in the university as discussed above, or assessed against some external standard (not necessarily *Maclean's*). This would tend to encourage collegial co-operation among departmental members in order to achieve departmental rather individual recognition. Department heads would be inclined to allocate resources and responsibilities with this goal in mind, subject to constraint; and department members might now more willingly accept allocations which accrue to the department's benefit whatever their individual selfish preference. Departmental sharing rules would have to be made known in advance, but there are any of a number of possibilities, as long as there is *some component of reward that is related to contribution to collective output.* This reward need not be narrowly financial, nor must the contribution be confined to the traditional definition. For example, certain faculty might be released from some teaching in order to prepare grant applications, design common research tools such as an omnibus survey instrument, co-ordinate departmental research activities and personnel, etc.

The principle of linking some component of individuals' reward to departmental output applies, of course, with even more telling force to the department head or chair. Since the head, more than other departmental members, is in a position to exercise leadership and more authority, it is important that the incentive structure reflect this accountability responsibility. Simply put, whatever the package of remuneration for departmental chairs, there must be a relationship to the performance of the department as a whole, for that is the test of managerial effectiveness. In the long run, the department head will make better allocation decisions and improve managerial judgment, including those involving tenure and promotions when they arise.

What holds for departments and department heads obviously should hold, *mutatis mutandis,* for associate deans and deans, and vice-presidents whose responsibilities have to do with academic matters of teaching and scholarship. One wonders, for example, whether decisions of deans would be different if they were called to account in a more concrete way for their managerial decisions than is presently the case. University administration sometimes fail to understand the perverse-incentives nature of their policies. For example, on the one hand, vice-presidents of research often exhort departments and individual researchers to seek external research grants. On the other hand, the university regards the overhead portion of these grant monies as belonging to a common pot, and the department winning the grant must apply, along with supplicants from other departments, for additional money for the department. These monies may be necessary to offset the costs of extra effort to conduct research. There seems to exist no understanding of how incentive-incompatible are such policies, and a simple contractual or negotiated "sharing" rule would be preferable. The university administration's view that these matters involve strategic rationing of financial resources, however well intentioned, neglects the strong disincentive feature of that judgment with the result that fewer grants are sought, and the result that all parties end up losers.[23]

Another example concerns the policy of reclaiming all positions that become vacant for reassignment by the Dean. Again this is motivated by good intentions and the desire to reallocate staff where most needed. But this policy may reduce excellence and lower staff quality. For example, if departments considering the tenure status of a marginal candidate are told that a negative decision means loss of a position, they might well prefer a tenured inferior colleague than either no colleague or an uncertain future chance for a superior colleague. Again, the structure determining choices in the university are not incentive-compatible. It must be stressed that there are no villains in this piece — just a failure by persons of good will to appreciate the incentive-incompatibility of their judgments.

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[23] This example actually draws upon personal experience and perhaps reflects my frustration in failing to convince the then-vice-president of the self defeating nature of the university policies. Unfortunately, I took away the impression that there existed not so much disagreement but rather the vice-president's inability to grasp the point of incentive-compatibility.

ON TEACHING, RESEARCH AND PAY

It is a gross understatement to say that there is much concern these days with teaching and research in the universities. Some wonder whether Canadian universities do not place too much emphasis on research to the detriment of teaching. Others state that teaching is undervalued, both by faculty as well as administrators. Other claim that the structure of incentives are skewed towards rewarding research and penalizing good teaching, even if we could measure good teaching when we encounter it. Again, we approach these question from the perspective of incentives, employing the market metaphor in order to gain some insight into this complex issue. However, our analysis should not be taken literally.

Professors possess, and universities demand, a variety of skills. The portfolio of activities entrusted to academic staff typically include teaching, research, public service and committee work within the university. A rational professor will undertake these activities with such intensity of effort so as to respond to the reward structure indicated by the university, subject of course to minimal acceptable standards in each category. The relative importance placed on these different activities, as expressed by clauses in a collective agreement or oral history of customary practice, varies from institution to institution. In addition, professors do not possess these various skills in equal proportions. After a time, professors may be expected to "specialize" relatively more in one area than another, all things being equal.

Stripped of its ornamentation, the questions one usually wants to ask are: How does teaching pay compared to other activities, say, research or administration? And what explains these differences? There are other questions of course, but these two are important for examining the incentive structure of universities.

A study of salaries and productivity of faculty from a variety of departments using detailed information on output (such as publications, service, teaching, committee work, etc.), detailed information on factors determining promotion and salary (such as education, age, student evaluations ratings, etc.) found the following patterns (Katz, 1973). Although teaching, research and service were the stated criteria employed, teaching ability as measured by (undergraduate) student evaluations was inconsequential in the reward system; however, teaching (measured by doctoral supervisions) and research ability were very important determinants of salary; and while public service and committee work were rewarded, the returns were "not spectacular." The return (in 1970 dollars) was $2.78/hour for public service and $4.88/hour for committee work. Among the other relevant findings: there are diminishing financial returns to publishing of articles and books; reviews are totally worthless; student evaluations were the least predictive of salaries; productivity was significantly different by rank, implying certain minimum standards for promotion; and professors seem to take a "short breather" once tenure is granted, as there appears to be a slight dip in productivity after promotion to associate professor; but output increases again later on. "National reputation" was an important factor explaining salary and promotion. Interestingly, scholarship and service are "complementary" in the sense that full professors work more hours on research and public service than lower ranks. Therefore, either public service and committees are important variables in explaining rank or some of the perquisites of rank, for example, are opportunities to lecture to the public, edit a journal, or serve on committees. (Katz, 1977, p. 476) This brings us to the question: Why is teaching seeming so unrelated and "under-rewarded" in comparison to the other skills in the academic portfolio? After all, even routine committee work is valued.[24]

One approach to an understanding of the differential valuation or rewards to the activities of teaching and research is to invoke the market metaphor. Just as individual faculty possess differing amounts of skill for teaching, research, and service, departments also face an allocation problem with respect to its staff compliment. The market return to outstanding teaching is limited by the market, a familiar proposition since Adam Smith. "A problem arises when outstanding teachers attempt to sell their skills to other institutions or when new Ph.D.'s with untested skills enter the job market. Good teachers are normally known locally" (Tuchman, Gapinski & Hagemann, 1977, p. 693). In short, the market for outstanding teaching skills is limited, and the price paid for it is low. On the other hand, by comparison, versatile research skills are more substitutable with other occupations (in industry or government, for example), are more malleable in application (persons with a good grasp of quantitative techniques, writing skills, etc., can apply these talents in many areas, including consulting) and, therefore, a relative premium is paid for research skills. Furthermore, research skills are more readily (if imprecisely) measured and monitored. And as we have argued, the ability to access information at reasonably low cost is the key to a self-enforcing incentive-compatible employment contract. We should be less surprised, then, that research "pays" more than "teaching" in universities in general.[25] Indeed, winning a teaching award yields a lower rate of return than even nominal publication of articles in the social sciences, liberal arts, math and engineering and the biological sciences. (Winning a teaching award implied a negative return in the physical sciences. See Tuchman et al., 1977. p. 696–697.) On the other hand, administrators (one who listed administration as the prime university work activity, a dean or department head) are paid well; becoming an administrator results in a salary gain that was a minimum three times the gain from teaching and service *combined.*[26] This salary gain is matched only by extensive article publication by the academic "superstars."

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[24] Jean Louis Agassiz (1807–73) was a Swiss naturalist who became professor of zoology at Harvard in 1848. Agassiz once refused to address a learned society on the grounds that such lectures took valuable time away from his research and writing. When offered a handsome sum for the talk, Agassiz replied: "That's no inducement to me, I can't afford to waste my time making money." Here, the demands of public service, research, and financial reward unhappily collide.

[25] An interesting question is the following: how many more articles must a comparable female social scientist publish in order to reach the salary level of a male? The answer is twenty, so put in these terms, the disparity is substantial(Tuckman et al 1977). Tuckman et al does not mean values in his regressions, but Katz (1973) reports the mean number of articles published lifetime as 15.36.

What about those academic superstars? Again, one appeals to the market metaphor for insight? Superstars refer to those small numbers who earn high incomes and "dominate the activities in which they engage" (Rosen 1981: 845). Superstars result when both market size and reward tend to be skewed towards the most talented; this can arise from the "technology" of the production where small difference in talent can be magnified in large earnings difference. Top researchers perform in a wider market setting than teachers as a rule; their knowledge output (creative work, musical score, best-selling text, industrial patent, etc.) is more in the nature of a public good in the joint-consumption sense, meaning that many, many individuals can enjoy its benefit without detracting from the enjoyment of others. However, the key difference is that the property rights to this output are often assigned to the researcher/creative artist/performer. Further, outstanding faculty talent at this level has few substitutes. Consequently, as Rosen (1981: 847) notes: "When the joint consumption technology and imperfect substitution features are combined, the possibility for talented persons to command both very large markets and very large incomes is apparent."

TEACHING AND RESEARCH: SIAMESE TWINS OR UNRELATED HITCHHIKERS?

What is the relationship between research activity and teaching performance? Are they so intertwined that one only grows as the other does so as well? Or are they so unrelated that they are capable of travelling in different directions on the knowledge highway? To glimpse an understanding of this relationship, one might begin by examining the structure of academic work and its time and effort requirements. Unfortunately, there is little known about the time-use pattern of academics, for the very reason why the issues surrounding academic performance are problematical; namely, the inherent difficulty of monitoring faculty activity. Nonetheless, two studies are informative, though not widely published. One is the APIC (Academic Profession in Canada) study, a national survey of full-time faculty in fifty-two Canadian universities (Lennards, 1986). Another is a study by Bertrand (1994) of Quebec faculty. Both studies, as well as some US studies, are cited in technical papers produced by the Task Force on Research Allocation for the Ontario

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[26] Many academics have asked themselves why university administrators are so highly paid, probably assuming implicitly that the formal educational credentials of their former academic colleagues who are now in administration are no better than their own. What they fail to appreciate is the work conditions of the administrative position in terms of flexible hours, fiscal responsibility, public service, etc., differ enormously from teaching and research. An administrator is not merely a departmental colleague who has decided to specialize in committee work, at least one hopes not. On the other hand, one of my colleagues offers a different explanation. Administrators, rather than the teaching and researching faculty, ultimately control the university budget and salary structure. Therefore, it is not surprising that administrators' salaries are higher than those for academic faculty.

Council on University Affairs. The Task Force (Ontario, 1994a) reports that university faculty work between 50-60 total hours per week, a figure similar to a number of US studies. Although faculty allocate their time among the work components of teaching, research, service and administration in different proportions during teaching and non-teaching terms, for the entire academic year faculty time is allocated as follows: 40% to teaching, 30% to research, 15% to administration duties, and 15% to community or professional service activities. There is little variation in time spent on administrative and external activities, but more time is spent on research during non-teaching periods, as would be expected. Again, the structure of workload depends upon the type of institution, but it is comforting to note that the overall impression is that faculty workload patterns are similar throughout North America universities.[27]

Among the other findings relevant to our inquiry is the fact that tenure status did not have a statistically significant effect on time spent on teaching; on the other hand, tenure stream faculty did devote more hours to research than other groups. The prospect of being granted tenure apparently has a most salutary effect on effort in terms of putting in the hours and, in this sense, is quite incentive-compatible. So too is the prospect for promotion, it would appear, since the differences across academic ranks in the time allotted to teaching are very small; but at the same time, differences in the amount of time spent on research were statistically significant (Ontario, 1994a; p. 17). These results should not be too surprising, yet encouraging. Teaching is a both a time-intensive and time-constrained activity; once a faculty member is given a teaching assignment, it is necessary to devote a prescribed amount of time to its execution. The time commitment is subject to little variation as the requisite number of lectures, labs, tutorials, examinations, consultations, etc. must be delivered without fail. It is not surprising that we observe little variation in time allocated to teaching by faculty differentiated by tenure status, academic rank, and the like. We are also likely to find much the same result with respect to teaching time by examining age, experience, salary, or other such factors.

There is one notable exception — gender. For Ontario, and during the teaching term, women faculty reported spending seven percent more time on teaching than men, and a corresponding lesser amount of time on research. There is, however, a large amount of unexplained variation; when all factors are considered, only 12% of the observed variation in research hours is explained.

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[27] In 1992-93 Ontario universities spent $3990 million, including a blockgrant of about $1975 million to the university system by the Ontario government. The Task Force on Resource Allocation (Ontario, 1994c) estimated that the proportions spent on teaching, research and community service were 53%, 36%, and 11% respectively. Faculty salaries were apportioned based upon time allocations from the APIC data, and support/administration expenditures were allocated to the primary functions of teaching, research and service. Universities now receive their funds from the provinces, which in turn receive monies from the federal government unconditionally. I have elsewhere discussed federal-provincial financing of universities but this was before the advent of block grants (Strain & Hum, 1988). I remain one of the unrepentant few who believe in the device of conditional grants for specific purposes, but that is another topic.

In any case, time spent in a given activity does not translate simply into productivity. Measuring research productivity by published books, articles in referred journals, and public performances (where applicable), the APIC survey reports a very uneven distribution of research productivity. This feature is similar to other Canadian and US findings; therefore the generalization is warranted that about 90% of publications are produced by 40-50% of the faculty. The uneven distribution of research productivity among faculty across many fields raises the question of whether this high productivity on the part of certain faculty comes at the expense of teaching performance. We have already observed that necessary time spent to deliver teaching may be relatively inflexible, as a result of the delivery technology. The APIC survey found that while high producers of refereed articles spent about double that amount of time on research as low level performers and about 16% less time on teaching, the two groups are virtually identical in terms of time inputs after adjustments are made for average course load. It would appear that high producers purchase their research productivity by course reductions, perhaps through "buy outs" or release time for research, sympathetic department heads, etc., rather than at the expense of shirking their teaching obligations. In other words, "high research productivity may not always come at the expense of teaching productivity" (Ontario, 1994a, pp. 26–28).

Is there, then, even a functional relationship between teaching and research in the sense that the quality of the endeavour in performing the one enhances the performance of the other? In the jargon of economics, is research complementary to teaching? Myth and opinion abound on this question. In a recent review of the literature by the Task Force on Resource Allocation (Ontario, 1994b), a variety of positions are discernable, ranging from the one in which research and teaching are necessarily coupled, to others in which the two are independent or conflicting, to a position in which research and teaching are held to be incompatible. Statements by university presidents, Nobel Laureates, and other individuals given platforms to pronounce on this relationship suggest a substantial consensus that research and teaching form a sort of synergism, although other views exist. But despite the impressive credentials of those making these pronouncements, the empirical evidence accumulated over the past twenty-five years suggests that there is no necessary link between effective undergraduate teaching and research. The definition of teaching refers to instruction of undergraduates, typically measured by student ratings of instruction, the best validated of the practical measures. Research is taken to be "discovery" research; that is, "pure," "basic" or "scientific" research — the kind typically published in peer reviewed journals. With this "narrow" definition of research, and this "imperfect" measure of teaching effectiveness, the thorough survey of the serious empirical attempts to investigate the relationship between teaching and research concludes that discovery research and undergraduate teaching are independent or mildly conflicting. In the report's words: "the case for university faculty maintaining a major involvement in discovery research in order to support their undergraduate teaching activities has not been made" (Ontario, 1994b, p. 13). Further, ". . .the belief that good teachers are good researchers is one of the . . . myths in higher education" (Ibid., p. 18). Indeed, it is almost comical to see academics adapt this myth in various situations. Faced with university-wide cuts to such services as library holdings, computing facilities, and the like, academic faculty are quick to point to the damage such actions do to research, which, they assert, is so obviously complementary to their teaching function as well. On the other hand, if reminded of their less than stellar performance as researchers or teachers by their unkind colleagues, the retort is that they have been seriously engaged in the "other" activity.

The obvious shortcoming of the statement that no relationship exists between teaching and research lies in the very definitions chosen. However, the most thorough and recent review of the literature studying the relationship between research and teaching, employing a meta-analysis of 58 studies and with due regard to the kind of evidence necessary to assess the various types of relationship, demonstrates that "the relationship is zero" (Hattie & Marsh, 1996). Winning a Nobel Prize may not make one the best of all undergraduate instructors. Perhaps, the definition of teaching needs to be broadened to include graduate teaching, in which case the so-called "teaching" may well be research. At the same time, there are others who would broaden the concept of research beyond discovery research. For example, Rice (1992) and Boyer (1990) would accept a four-fold classification of scholarship, comprising discovery, integration, practice, and teaching. The term research is not favoured, but discovery scholarship would be akin to discovery research. The scholarship of integration is the act of synthesis of knowledge, not necessarily new discovery. Practice scholarship refers to application of knowledge to the problems of society, and teaching scholarship includes knowledge of effective ways to present subject matter. However appealing, or confusing, this alternative view of the academic work may be, we are still in much doubt and uncertainty. For example, if the "low productivity" researchers have not been doing the kind of discovery research but instead pursuing the other avenues of university scholarship, and given there exists no relationship between discovery research and undergraduate teaching effectiveness measured by teaching evaluations, what can we infer from this new typology of scholarship? The issue may be posed more sharply symbolically. If we expand the scope of university work activities to include three other ones in addition to discovery research [R] so as to have [R, S1, S2, S3], and there is no relationship between discovery research [R] and teaching effectiveness [T], what does this say about the set [S2, S3, S4] and teaching effectiveness? Nothing, at this point without further enquiry.

To summarize, if undergraduate teaching effectiveness is the objective, and university scholarship is narrowed defined as traditional discovery research, then there is no necessary connection between the two, eloquent pronouncements to the contrary. This fact, once appreciated, can have implications for university organization and incentive structures.

UNIVERSITY INCENTIVE STRUCTURES: A PARABLE

Leaving aside the phenomenon of academic superstars, the vexing question remains for those who worry about the "appropriate" incentive structure for realigning the teaching and research functions of universities. (Neglect, conveniently for the moment, service and administration.) The policy issue is usually stated more sharply in terms of criticizing university professors for concentrating too much on research, and spending not enough effort and time on teaching. How might one redress this balance, if one wishes? And would it be a good thing to do so?

Some recent economic research on the design of incentive *systems* and market structures and settings might be helpful in answering these questions, but the discussion in the professional literature can often be highly technical and frequently employ terms unfamiliar to non-economists. To give some flavour of the insights gained by these two approaches, one might try telling a parable. Suppose there are two independent firms side-by-side; one is engaged in teaching or instruction of "students" for fee, and the other is engaged in conducting "research" for contract monies. Suppose also that individuals may freely choose either the lifetime occupation of teaching or researching. Under unconstrained market conditions, we would expect to observe an eventual matching of individuals who choose the research occupation working for the research firm, and individuals who choose the teaching occupation employed by the teaching firm. Each firm will have designed its internal incentive structures in an optimal manner to achieve its particular objectives, and the market will reward each firm and each occupation accordingly, without any necessity that either wage levels or wage structures be identical or even similar. Of course, to the extent that some individuals would wish to work a portion of their time in the other firm, this is also possible, and we might see a number of individuals commuting between firms, working different amounts of time in each, and receiving total remuneration related to their task mix.

Consider what might happen if both firms must now merge by government fiat; there must be no layoffs (because of tenure), or hires (because of restraint); and there must be a common wage structure, as well as a common job description and identical task allotments (because of unionization) to all individuals in the newly-merged firm. The effects of these "restraints" on the new firm are probably intuitive. For the firm, the problem is to design a new incentive-compatible *system,* in which account must be taken of the "different dimensions of the worker's task portfolio" (Holmstrom & Milgrom, 1994, p. 972); in particular, it will involve, among other things, identifying tasks which are "complementary" in productivity,[28] or "substitutable" in effort. The design can be quite complex, depending again on considerations of whether shirking is an issue, or whether the residual reward from the market valuation belongs to the firm or the individual (ownership of property rights), and even whether measurement of output and performance is costly, or possible. The list goes on, but consider just the last complication. For example, if teaching undergraduates provides little or no gain to research productivity, professors will not allocate much effort or time towards improving teaching evaluations if the reward structure, as noted above (Katz, 1993), does not pay for teaching "excellence." If the university-firm wishes to encourage more time spent on teaching under a self-enforcing incentive-compatible framework (which may be taken as one hallmark of collegiality), the wage structure must now be tilted in favour of a relative improvement in the teaching component. And if measuring teaching performance is impossible or extremely difficult, this would have to be accomplished by *reducing* the reward to research instead, because teaching undergraduates and conducting research are substitute activities in effort (input). On the other hand, if teaching (say, graduate students) is complementary with research in productivity (output), as also noted above (Katz, 1973), and teaching effectiveness equally difficult to monitor or measure, then the optimal wage structure must accomplish this by *increasing* the reward for research achievement. The question of the "ideal" incentive structure can be exceedingly complex for a university-firm providing numerous functions and serving different publics. In this parable, we have tied-suppliers rather than the more familiar tied-sales phenomenon, and the conditions for profitable "bundling" may not be satisfied.[29] As Holmstrom and Milgrom (1994) note: ". . .one should not try to explain any one particular attribute of the employment relationship [for example, tenure — DH] without reference to substitute and complement attributes. . .".(p. 989) because the key is ". . . to evaluate them not in isolation, but as part of a coherent incentive system" (p. 990).

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[28] Milgrom and Roberts (1994) employ the theory of supermodular functions. If the function is smooth, this is equivalent to the condition that $d^2f/drdt$ > or = 0, where f is university output, say, and r and t are, respectively, research and teaching effort. Note that this means that when one input goes up, the *marginal* return from increasing the other one also goes up. If, for instance, a professor publishes an additional journal article per year, this implies that he or she will be an even better teacher. Similarly, if he or she teaches an extra course per year, it also implies that a faster rate of article production should be forthcoming. Is either, or both, plausible? You decide.

Now consider the merger from the point of view of society at large, where professors who initially chose one specialized occupation are forced to perform tasks for which they have less talent or taste than others. Prior to amalgamation of firms, there was a certain "occupational equilibrium" in the sense that barbers who cut hair did not have to perform brain surgery.[30] Further, mainstream economic theory derives a result (known as the First Theorem of Welfare Economics) that sets out conditions under which a price-incentive system can efficiently coordinate economic activity. But individual professors as a group, in exercising their choice of occupation, also exert influence on the final market price of teaching and research in various ways. Again, the mathematics involved in examining this intertwined issue is complicated (see Makowski & Ostryt, 1995). But consider this limited aspect, and heuristically. Rewarding individuals the full amount of their social contribution (what economists call social marginal product) is good for incentives and will lead to efficient allocation of occupational choices for society. But this would require that individuals be able to appropriate fully their social contribution; otherwise, the number of persons wishing to pursue that occupation will be too low. In the university context, full appropriation is likely to be more feasible with respect to research output (as argued in the examination of academic superstars and ownership of property rights) than it is with respect to teaching, where the social contribution is reckoned (if measurable at all) in terms of the future lifetime contributions to society of successive classes of students. In short, lack of "full appropriation," as identified by Makowski and Ostryt (1995), is one of the reasons for inefficiency of the incentive structure. Another cause of failure can be attributable to "noncomplementarity," an aspect similar to the "strategic complementarity" of different incentive attributes of the whole *system* examined above.[31] And this latter analysis can be examined in terms of the economist's familiar "elasticity of demand," a market concept connoting how sensitive to "price," broadly interpreted, is the public's demand for university services of various kinds; namely, teaching and research.

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[29] See Philps (1983) for a discussion of bundling, the practice whereby several products or services are offered together by the same seller for the purpose of extracting more consumer surplus.

[30] Barbers did in fact perform surgery at one time. The apparent view was: cutting is simply cutting.

The above parable has been conducted in terms of the university functions of teaching and research, and in principle, could be easily extended to include other occupational categories, such as administration or community service. Doubtlessly, time spent on administration or service will be substitutes for effort in teaching or research, unless these activities are undertaken totally "voluntarily," and there is never a time constraint. It is entirely another matter, however, whether these activities are complementary with teaching or research; and it does appear that university administration (full time) is quite well paid (Katz 1973). If one is unwilling to believe in strong super-modularity between administration, research and teaching, we might then have to appeal to the notion of compensating wage differentials, a view with wide currency since ". . . Adam Smith first observed that public hangmen received higher wage rates in compensation for their obnoxious task. . ." (Lucas, 1977, p. 549).

But what is this "obnoxious" task that administrators perform? One possibility, in terms of our parable, is that university administration serves the market coordination function, without which efficient occupational choice and resource allocation is not possible. Here again, only a heuristic treatment is possible, for the argument relies on potential products rather than products actually produced before the merger. We rely on a numerical example adapted from Makowski and Ostry (1995). Suppose that the teaching department can produce a unit output of graduate teaching at $1.25 but could only sell it at $1.00. Similarly, the research department can produce a unit output of research experience or mentoring at $1.25 and also sell it for $1.00. Neither will produce their product since

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[31] The industrial organization implications of strategic complementarities was first examined by Milgrom and Roberts (1990) who employ the theory of supermodular functions. Subsequently, their main theorem was shown to be stated incorrectly, but the mathematical corrections have now been made. (see Bushnell & Shepherd, 1995; Milgrom & Roberts, 1995; Topkis 1995). The original result intended to establish robustly that "better technology" would reduce costs and lower prices. With the recent mathematical amendments, another interpretation is that better technology may make it easier for firms to increase quality, and this might lead to price increases if demand were sufficiently inelastic. In the present context, universities should be warned that raising prices (tuition fee) and lowering quality are opposite sides of the same coin.

cost of production exceeds the market price. However, potential students seeking graduate training realize that teaching instruction would be enhanced by research experience, and research experience is enhanced by teaching instruction such that the amount that would be willingly paid for this combined package is $3.00. In short, if the separate "markets" were to operate solely on the basis of their own "local price" indicators, neither training or research mentoring would be offered at all. But because a market opportunity is possible (and profitable) if both separate segments are "co-ordinated," this accords an important responsibility to university administration; namely, to bring into being what would otherwise not exist.

Where does this all take us then, in terms of public policy if we do not wish to engage in further refinements of economic theory. What have we gained, if anything, from our market perspective? (Remember, a parable must contain a moral lesson!) What the market perspective tells us is that research and teaching may be doomed to suffer a differential in rewards as long as teaching remains fundamentally a local market, interactive, and personal process, while research is open to the wider market, non-interactive, and public good phenomenon.[32] Further, as long as the "university-firm" is structured (as now) along the lines of a super-department store, with a single employees' union prescribing a generic job title for everyone, with all employees expected to give identically-portioned amounts of their time to research and teaching, the incentive structure will be inefficient to a degree. There will be unavoidable tension, if not outright contradiction, among the many attributes which comprise the university incentive system. On the other hand, the market perspective suggests endless possibilities for changes, but these must be "tailored" to the special circumstances and problems they are intended to address. One such set of special circumstances is considered later, when faculty are represented by an association or union. But first, a digression on students.

ON MOTIVATING STUDENTS OR "ARE YOU SERIOUS?"

Although the main concern of this essay is tenure and the pay structure of faculty, particularly its incentive-compatible characteristics, the same considerations can be brought to bear in examining how universities currently motivate students to achieve superior results. More broadly, are the rules, regulations and practices that are now in place governing students ones which are conducive to enhancing student effort?

Students undertake their university education in a number of "steps" or "ladder rungs"; for example, the bachelor's degree, the master's degree, or the doctorate. Within the bachelor's degree program, one might even distinguish "years" such as freshman, sophomore, junior and senior. Or within the doctoral program there are the benchmarks of the candidacy examinations, and the thesis defense, and there are time limits for completion, analogous in some ways to the time limitation on tenure. In short, there are benchmark events for "promoting" students to the next level similar to those applicable to university faculty.

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[32] We cannot, and perhaps should not try to, make research less a public good. But some might be tempted to deliver teaching through different technologies such as television, the internet, teleconferencing and the like, hoping to groom "superstar" tele-instructors. This would pervert, in my view, the notion of teaching as a quintessentially personal process. Further, many would probably continue to prefer the hands-on instruction of an individual live golf pro, say, to the latest video by Jack Nicholas or Arnold Palmer. Attempting to reach a teaching market beyond its natural limit reduces teaching to the vulgar notion of mere information transfer. "Hello, Computer Chip" is no substitute for "Goodbye, Mr. Chips."

The grading process is analogous to the evaluation of faculty productivity; and the tuition fee essentially plays the same role as the salary scale for academics with the obvious difference that tuition fees are paid to the university while salaries are paid to faculty.[33] As well, just as there are regulations delimiting the amount of authority or privileges accorded to faculty, so too are their rules restricting students, such as course or program requirements, voluntary withdrawal procedures, minimum standards of achievement, and the like. These also constitute the students' "contract environment," as it were.

If so, how "self-enforcing" or "incentive-compatible" are typical arrangements in Canadian universities? The same problems and goals pertain to students as to faculty. For example, monitoring student effort (that is, inputs of time and energy) is difficult, if not impossible. Information is very costly to obtain, and is often imperfect. Yet, the university's objective with respect to students, generally stated, is identical to that for faculty: we seek to minimize shirking among students; we aim to motivate superior performance, appropriately defined; and we want "excellence" from our students no less than we expect from faculty.

Consider the fee structure of universities. It is typically "flat" as students pay the same fee per year of study, a year comprising a five course load, say. A flat fee schedule provides less incentive for superior performance than would a schedule which relates fee for the next "step" to immediate past academic performance. Fee discounts are the mirror image of scholarship prizes. For example, suppose that fees for the second (but not first) and later years are set at a "high" level for nominal purposes, but actual fees charged in any year decline with Grade Point Average (GPA), either the past sessional GPA or cumulative GPA. The exact details are not important.[34] What is important is the link between scholastic performance and "reward," whether it be structured as a tuition fee rebate, an automatic scholarship whose value is linked to GPA, or a deferred bursary.[35] By deferred bursary is meant a loan with conditions for repayment or forgiveness. The usual design is to pay the tuition fee on behalf of the student as a loan. If the student graduates, the loan is not repayable as it is considered a deferred bursary. However, if the student forsakes studies, the loan is repayable. The design is easily adaptable to accommodate the transformation of loans to bursaries according to academic performance. In sum, a flat and uniform fee structure is not optimal from an incentive-compatible framework. It does not reward superior performance nor lessen shirking.

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[33] Instead of viewing the grading process as evaluating individual student achievement in terms of some absolute standard, it is also possible to view the grading process as a ranking procedure for a tournament, much along the lines discussed for professors. In fact, this is the position implicit in the practice of "grading along a curve," in which a preconceived percentage of students are to receive particular grades. It is therefore hard to reconcile the following statements often asserted by faculty: "Standards have fallen of late" (meaning there are more D's?), "Grades are being inflated" (meaning the average grade is a B when formerly it was a C or C+ ?) with the assertion: we have always graded on a curve.

[34] A competent university comptroller working with a single economist could probably come up with a "revenue neutral" fee structure which assigns lower charges to the (fewer) students achieving grades of B+ or better, say, and higher fees for those (more numerous) students getting below C+, in less than a month's time. A university committee with all "stakeholders" represented, and required to hold hearings, could take more than year.

To the claim that money fees do not influence student effort, one can only observe that many students seek and hold jobs while pursuing academic studies on the very reasonable claim that these monies are required for fee payments. Society, and universities, may well decide that extra effort at study (for immediate monetary gain) is a better substitute for hours spent in employment in the customary student occupations.

High fees with graduated reductions offered to those with superior performances may constitute a barrier to higher education for others. High fees, it is argued with much passion, deter accessibility. Accessibility can be accommodated in a university wishing this by having "even lower" fees for the first year. To the extent that fees influence further demand for university education, the fee reductions for those having superior first year results are exactly the "incentive-compatible" result one would wish. In this very limited sense, the second year represents the equivalent of the tenure benchmark for faculty. Thus "accessibility" need not be contrary to "excellence." It is stating the obvious that some other benchmark other than the arbitrary "second year" could serve just as well.

The tenure "prize" is meant to encourage superior performance and to penalize shirking among faculty. Failure to attain tenure results in termination. Is there an equivalent concept for students? Since paying fees by students serves the same incentive purpose as awarding salary increases to faculty, the parallel can be seen in terms of a rustication policy. For students who demonstrate lack of effort, or maturity, or seriousness of purpose, through failing, say, more than three courses, a policy whereby such students must withdraw from university for at least a year before readmittance is defensible. It would also most certainly be, *ex ante*, incentive-enhancing.

The same principle applies, albeit in less extreme form, with respect to the practice of voluntary withdrawals from courses without academic penalty. It is possible in some universities to withdraw voluntarily after four-fifths of the term has expired. It can hardly be argued that the purpose of voluntary withdrawal is to provide better information for students to make wise choices respecting course selection. The idea of "sampling" is valid in principle, but few stores allow you to return an almost-empty tube of tooth paste. The purpose, and entire design, behind voluntary withdrawal dates needs reappraisal for their incentive-influencing effects; and late withdrawal dates which encourage risk-minimizing grade-maximizing behaviour should be accompanied, at the very least, by a prohibition from taking the same course in the very next term.

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[35] A deferred bursary of the sort I have in mind here is not the same thing as the ill-fated income-contingent loan plan (ICLP) recently suggested by the federal government. The issues pertaining to ICLP are well discussed by West (1993) with commentary by Kesselman. The concern of the ICLP is with financing, and the terms for loan repayment after graduation. My concern here is with the incentive structure for academic performance before graduation. However, I am personally in favour of the ICLP concept.

Why should the university or society care about limiting voluntary withdrawals, or proscribing immediate re-registration, or any of a number of common regulatory practices? After all, is it not solely the prerogative of the individual student to pay additional tuition, or repeat the course requirements? There are efficiency reasons and equity arguments for believing this is not so. Consider the efficiency argument first. There are costs borne by others when a particular student lacks seriousness of purpose, or shirks, or takes up a "class slot." The shirking student without scholastic commitment inflicts damage on classmates by lowering the overall quality of the educational experience, not only personally but for others as well through providing less intellectual stimulation to classmates and the instructor, perhaps jeopardizing joint assignments, and otherwise tendering an inferior contribution to the joint effort that is education. Economists refer to these effects as negative externalities, and since the individual shirking student does not bear the full social costs, this is far from ideal even if the student is willing to pay the full individual fee again. A regulation which "ups the stake" for a voluntary withdrawal is incentive-compatible relative to the status quo because it should discourage this behaviour.

The equity argument turns on the notion of what it is that the university wishes to provide when it claims it wishes to maximize accessibility. If accessibility means "a first opportunity" for all, as opposed to "a permanent opportunity" for some, then equity must surely imply that those voluntarily withdrawing, or performing at competence levels warranting rustication, should cede their spot in the queue to others requiring their "first opportunity." It is assumed, of course, that scarcity exists in some form in the universities; if there were no shortages of faculty or student places, then the equity argument would lose its sharpness. But I simply assert the stylized fact that universities do not have limitless resources.

The above is merely a very incomplete sketch of how the notion of incentive-compatibility might be brought to bear on student behaviour. As conceded, our focus is principally directed towards academic faculty, and this digression is meant to illustrate that these principles are applicable for motivating students as well. My purpose is illustrative, not exhaustive; so I leave that task to others or for another occasion. It is probably worth the assertion that small changes in regulations or fees taken individually can constitute a package of incentives sufficiently strong to motivate desired behaviour. Accordingly, to those who might query my specific suggestions with the probe: Are you serious? I should point out that the question is best asked of the students themselves.

REPUTATION GOODWILL AND TENURE

A wide variety of factors enter into the decision of a student when selecting a university. These considerations include financial cost, parental influence, convenience of location, curriculum structure, availability and amounts of scholarships, and the like. In addition to this incomplete list may be added more intangible factors such as the "brand name" of the institution. Whether or not universities wish to think of their institutional assets as including an item such as reputation "goodwill and other such nothings," the question at hand before us is what relationship, if any, exists between tenure, reputation goodwill, and university performance?[36]

Informally, it would appear that many think there is a relationship between the quality of a university and the willingness of students to attend such a university. This is the implicit assumption behind *Maclean's* rationale for rating universities; namely, to provide this information to students and parents in order to allow them to make informed choices. It seeks to perform a public service by publishing a sort of consumer guide supplement. More instructive, *Maclean's* chosen set of indicators of "quality" includes, among other things, the number of first year courses that are taught by tenured faculty. In recent rankings, *Maclean's* (November 25, 1996) writes:

> For undergraduates, the classroom is the front line of learning. Because tenure is a significant measure of a faculty member's worth, *Maclean's* measures the commitment of universities to placing tenure and tenure-stream professors at the head of first-year classes. (p. 40)

Whether or not this assertion is mere myth or supportable by hard evidence is not examined by *Maclean's*, but the very fact that it has chosen to include the issue of tenure in their ranking criteria, however much criticized, is indicative of the conventional wisdom. Further, whenever issues of termination of faculty arise which seem to violate tenure or do not appear to be justified in the eyes of the Canadian Association of University Teachers (CAUT), this watchdog organization places that university on a list of censured administrations in order to warn prospective appointees that the university in question fails to observe the normal academic freedom protocols. In sum, the reputation of a university in delivering quality education services is determined in part by its willingness to assign tenured faculty to instruction, or so it is claimed.

That students will be attracted to universities which have better reputations, all else being equal, is probably axiomatic in the sense of being accepted without further debate. The proposition is probably tautological. The only comment worth noting is that the reputation of universities can and does change over time, and its creation and maintenance can involve actions on the part of universities ranging from advertising on the side of public buses, to alumni endorsements, or publicity announcing research achievements, or campus beautification, or tenure standards for faculty. These activities are all costly, and all are thought to influence student demand for university spaces, although empirical evidence on these questions is virtually non-existent.

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[36] The terminology "goodwill and other such nothings" is legal language in commercial contracts referring to an intangible, salable asset arising from the reputation of a business and its relation with its customers. A literal interpretation is not intended.

Again avoiding a formal analysis, the relationships might be set out as follows. Students will seek to attend a particular university depending upon a number of factors which include the "price" (p) set by the university, interpreted more broadly than mere tuition charges, as well as the reputation (A) of the institution. Demand for university slots is summarized in terms of a functional relationship as $D = D(p, A, \ldots)$. Further, the reputation asset, A, is subject to decay or erosion over time and must be maintained, nurtured or improved by some policy actions U at some cost (C). We can represent these ideas compactly and symbolically as: $U = U(C)$. As well, the reputation asset of a university involves the feature of tenure, T, so that $A = A(T, \ldots)$. Hence, one of the many channels of influence is thought to run from tenure practices to reputation and goodwill, to student demand and therefore to enrollment and tuition revenues.[37] It is also stating the obvious to point out that what any one university does by way of tenure practices must be assessed in light of its competitors; for example, a university which eliminated tenure while universities elsewhere in Canada retained the practice might have difficulty attracting future staff.

If the above be true, then the value of tenure for faculty members may be different from the role which tenure must play in terms of university administrations, which must contend with changing or falling student demand, declining tuition revenues, deteriorating reputation, and the like. This is just a quaint way of saying that there are many different groups comprising the university, each with its own objectives, set of constraints and understanding of where power ought to lie, and how that power must be made "accountable," while respecting university "autonomy." Many voices are indeed present in the Ivory Tower.

IVORY TOWER OF BABEL: COLLEGIALITY vs MANAGERIAL AUTHORITY

If the institution of tenure is not well understood by politicians and the general public, neither are the typical defenses of it which often refer to such concepts as academic freedom, collegial decision making, self-governing traditions, free speech, and the like.[38] Others who attack university tenure as fostering sinecures, protecting deadwood, lacking accountability, and not providing total quality control or giving value for taxpayers' dollars are speaking a different language.

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[37] The comments in the text are inspired by the advertising capital model by Nerlove and Arrow, in which demand for a product is influenced by a stock of advertising capital, which in turn is subject to decay over time but can be augmented by costly expenditures (Nerlove & Arrow 1962). The solution involves complicated mathematics since it involves a problem in optimal control theory. I have elsewhere used this model to examine a market for durable goods. The difference is simply that the existence of advertising capital increases demand, while the existence of second hand markets for durable goods decreases demand (Hum, 1975).

[38] I exclude my own discussion from this characterization since I try to focus on the economic aspects of tenure arrangements. I touch on such matters of academic freedom, accountability and the like in this essay only in passing.

Yet there is a curious non-conversation that takes place with respect to the subject of tenure (and also sabbaticals, one might add). There is, however, no misunderstanding or misrepresentation of the *perceptions* about tenure held by the general public. The Ontario Task Force on Accountability (the Broadhurst Report) characterized the view of tenure outside the university as "an unnecessary protection too often provided [to] non-productive faculty. . ." (Ontario, 1993, p. 58). The Ontario Task Force rejects this view and quotes the university's defense of tenure as essential for the protection of "academic freedom" without further scrutiny. It recommended that university policies respecting appointments be approved and monitored by governing bodies to ensure appropriate accountability. Academics who observe university governance closely would also agree that governing boards must be more active. For example, David Cameron (1992) writes:

> It takes little imagination to appreciate that tenure, combined with lock-step salary structures, has severely truncated the capacity of universities to recognize and reward superior performance, or to respond positively to lackluster or deteriorating performance. Boards should be concerned about this, and should be taking steps to see that it is addressed. (pp. 180–181)

The report of the University Education Review Commission in Manitoba (the Roblin Report) was even more non-committal, making no recommendation concerning tenure whatsoever and forthrightly stating: ". . . we have chosen not to engage in a lengthy discussion of tenure, which is frequently cited as an impediment to institutional change" (University of Manitoba, 1993, p. 66). These two reports are typical of the many debates taking place on university affairs these days. They accurately portray public and university unease about tenure and its alleged deleterious effects to a fault, but they are less successful in explaining to politicians or the public the rationale for its continuing existence beyond appeal to some other unelaborated code term, such as academic freedom, a term equally unfamiliar to the general public which must at times express total frustration at our university and faculty leaders who appear simply to argue by declaration.[39]

The subject of academic freedom, and its many possible meanings, is not addressed at any length here. A good discussion is provided in a literature review of the concept and its relationship to university autonomy and accountability in a paper prepared for the Task Force on Resource Allocation (Ontario, 1995). Although academic freedom is identified as essential to the university mission, it is revealed to have limits, and to be related to autonomy and accountability in the minds of some. However, in elaborating on the essential ingredients of university autonomy, the survey cites only one author who lists a specific university power or duty that could be generously stretched to embrace the notion of tenure. It is "... the freedom to select staff ... and to determine the conditions under which they remain in the university. . ." (Ontario, 1995, p. 11). This could be interpreted liberally as implying tenure to be within the exclusive competence of universities rather than government or some other extra-university body. Nonetheless, the institution of tenure specifically, and how it relates to university autonomy or academic freedom, is never mentioned explicitly, let alone examined. Either it is assumed to need no separate defense or explanation, or it is thought to make its own case through moral intuition alone, since the review noted in its conclusion that the summarized literature (mostly American, one might add) on the issue of academic freedom and accountability was "based entirely on material developed within or by members of the university community" (Ibid., p. 31)

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[39] An exception is a brief discussion by Emberley (1996, p. 66) who writes that "the purpose of tenure is to preserve and nurture a scholarly culture where teaching and writing can proceed without intrusive hindrance from outside or inside the university." Emberley's book concerns the politics surrounding Canada's universities and tenure is located as one of the hot buttons of academic privilege decried by politicians and the public. His defense of tenure corresponds loosely to my section discussing external threats. My focus is upon the detailed design of the entire employment contractual relationship between academics and the university.

Yet overpaid professors who shirk but can't be dismissed are the unflattering image conjured up by the mention of tenure; and universities who refuse to question this practice, it is alleged, are simply not being "accountable." The many commissions, committees or task forces recently set up by governments to address university accountability outnumber a count of teams in the Canadian Football League. The motive to establish these inquiries is undoubtedly related to the funding shortfalls experienced by universities, and the understandable desire by provincial governments to "make sure" that the money given to universities is not wasted during these hard times. Are there efficiencies to be gained? Duplications to be eliminated? Programs that could be rationalized? And therefore savings to be had and faculty members who could be cut? But there's the rub. Tenure!

Despite the laudable goals of a more transparent and openly accountable university, the issue of accountability may not even be about spending tax dollars wisely or getting value for money. George and McAllister (1995) provide a recent summary of several provincial reviews of higher education systems and conclude that what is at issue is really a clash of cultures, or a struggle among power elites within the university theatre. The conflict is between a managerial culture which sees accountability as a way of pushing control and responsibility "upward" to non-elected bureaucrats in order to centralize decision making; and an empowerment culture which seeks to guard its autonomy by pushing responsibility "downward" to academic staff who seek to decide matters among themselves collegially. For George and McAllister (1995), the accountability movement which is sweeping across university campuses is not necessarily an unqualified good for the public interest. Indeed they report,

> . . . a fundamental dichotomy between the public's overall satisfaction with Canadian universities, as evidenced by survey results, and the claims of public officials that universities must be more accountable for their use of public funds and for their delivery of public policy objectives. (p. 32)

It is perhaps helpful to point out that there are many other dimensions along which cultural differences can take place. The university is merely the unavoidable staging area for these conflicts because the university is exceedingly heterogeneous in its needs and functions. In other words, the university is a miniature representation of wider social and economic relations. There are, then, tensions of the traditional managerial-union type between support staff and the university *qua* employer — that is, conflict over wages and work conditions unencumbered by tenure rules or a pay structure premised on deferred wages. Spot wages, spot productivity, direct monitoring and total quality control can, and are, some of the characteristics of this employment relationship since output is directly measurable and information on performance relatively easy to record. There are tensions of a different sort between the university administration and sessional lecturers and other academic service providers who have yet to obtain the "academic aristocracy" status of a probationary appointment. These are the gypsy campers outside the university gates, waiting for their chance to venture within. Their employment is characterized by the sort of arrangements that resemble "day labour" contracts or casual labour hiring halls — no job security, no benefits, low pay, and a portfolio of duties markedly different from that enjoyed by tenured faculty. There are also tensions of another kind between non-academic professionals, such as computer system analysts and others, who provide support essential to the university but whose employment arrangements must recognize the demand for their services in the market outside the university. The notion of tenure and deferred wages also does not apply to this group of mobile, skilled personnel whose talents could just as easily be applied elsewhere. Finally, there are the students, who are increasingly cast in the role of consumers, with the government adopting the role of the funding parent *in loco parentis*. Unfortunately this metaphor entails the notion of consumer sovereignty, with the further implication that if the vendor cannot satisfy this market demand with its tenured faculty, then the market lesson is that the tenured faculty must go. Consumer sovereignty is quite unforgiving here.

Given all these different "voices" or "languages," it should be obvious that there can be no one single omnibus employment arrangement for all these groups, and that the different groups serve different functions and different purposes for the university. The different groups will therefore require contractual designs that are informed by their peculiar circumstances and duties. Each employment arrangement will have to be negotiated in light of the different cultures that attend the various groups of labour working in the university; the academic faculty being one in which the case for tenure and deferred wages is a specific rather than an universal argument. Their voice should not be confused with the legitimate claims of other groups to be treated in different ways since there is a world of difference between an Ivory Tower of Babel and an university which is plagued by cultural schizophrenia.[40] Let us now examine more closely how the issue of tenure shapes the industrial relationship between faculty unions and university management as they seek to negotiate a collective agreement.

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[40] Hardy (1992, p. 212) also suggests that the unitary perception of the university be dropped in favour of the pluralist perspective, by which she means ". . . .recognizing that the conflicts we experience in the arena of higher education are . . . the inevitable result of the existence of different interest groups which, while working under the same broad paradigm, are often characterized by incompatible goals."

FACULTY UNIONS, TENURE AND BUDGET SQUEEZES

Faculty members rarely bargain with the university on an individual basis. Their interests are generally represented by a faculty association or union (hereafter union). What features distinguish university bargaining from the run-of-the-mill industrial relations conflict? Why do administrations feel "squeezed"? Why have faculty rallied to the defense of academic freedom and tenure? The link between declining fiscal resources and its direct connection to tenure is examined in this section with a simple model drawing from work by McDonald and Solow (1981) and Oswald (1993).

Consider first the university's short run position, and concentrate for the moment on the university's teaching mission. It receives annual revenue $R(L) = p.F(L)$, where $p = (t + g - c)$ is the net "payment" received per student enrollment comprising tuition (t), government grant (g) and variable cost (c). Variable costs are outlays such as periodical subscriptions for the library, utility bills, general maintenance, and the like. It excludes capital construction such as a new building or laboratory; these are classified as long run expenses. F(L) is a differentiable, concave production function relating output to faculty input, L. Let w be the wage paid to faculty, so the university budget position is simply: $B(L) = R(L) - w.L = B^*$, say.[41] There will be many (w, L) combinations satisfying a given university budget. Call these combinations isobudget lines; these have an inverted "U" shape and are shown in Figure 3.[42]

If the faculty union asks for, and gets, a wage, w^*, then the equilibrium outcome will be on the lowest isoprofit curve touching a horizontal line at w^*, say, point E on isobudget curve B1. It can be shown that a series of points traced out by the maxima of the isoprofit curves constitutes a downward sloping demand curve (say KD) for faculty labour, and the contract is considered "efficient."[43] Bargaining models which specify that unions attempt to win wage increases as well as employment for its members lead to bargaining solution "off the demand curve," since unions must weight the gains from higher wages against the discomfort of having fewer members employed. If labour demand is less than supply at the equilibrium wage level, workers are laid off on a random basis in the McDonald-Solow model.

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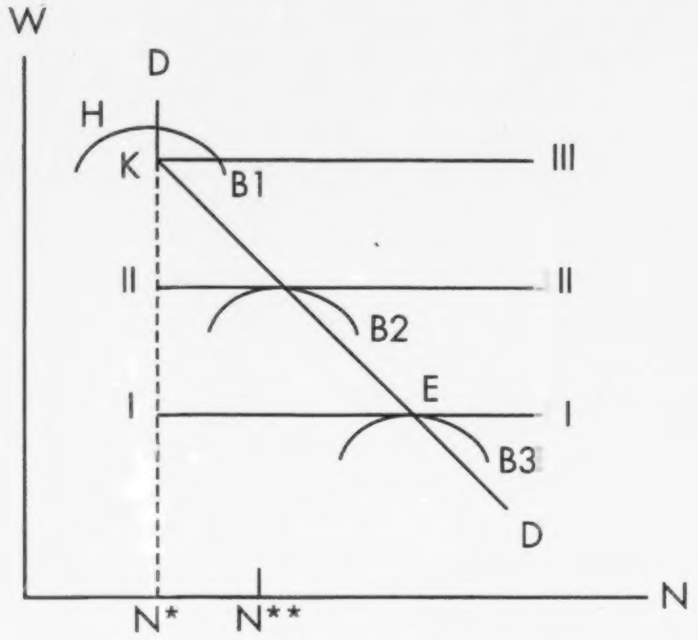
[41] The first Oxford Colleges were self governing foundations and the prototype was Merton, founded in 1264. An extract from its original Statutes, translated from the Latin, states: "The number of Scholars is to be dependent on the means of the House [of the Scholars of Merton] itself; and each individual is to receive fifty schillings, and no more, annually, the payments to be at fitting seasons, yet so that they shall receive every week a certain proportion for their commons." Morris (1978, p. 23) writes that "The Merton Fellow's statutory annual allowance of 50s could then have bought him, if he had spent it all on books, about a dozen cheap texts a year." According to Grant (1993, p. 32) the average salary of assistant professors in Ontario in 1990-91 was just over $44,000. Reckoning the price of a "cheap" personal computer about $3700, a professor could buy 12 of them with the salary.

[42] The slope of the isobudget line is $dw/dL = [R'(L) - w] /L$. Hence for any L, the slope is positive until w reaches R'(L), and negative thereafter. Lower isobudget curves are better for the university in terms of having a surplus, and higher ones are worse in the sense of incurring a deficit.

[43] Since the equilibrium is on the demand curve, these situations are said to be "efficient" contracts.

Figure 3



The McDonald-Solow model is extended by Oswald (1993), who notes that unions rarely determine the level of employment and layoffs are rarely random. The level of employment is determined almost entirely by management (Giles & Jain, 1989, p. 335) so it appears that unions have no direct interest in the elasticity of demand for labour. In a university whose practices include tenure, the union's indifference curves will have the following characteristics. Assume all individuals are equally productive, for convenience. Let N* be the employment level of staff who do not have tenure. Then for employment levels above N*, the union's indifference curves are horizontal lines (labeled I, II, and III in Figure Three) representing higher and higher wages. When the level of labour demand exceeds N*, such as at N**, tenured faculty members care little about bargaining over staffing numbers. The optimal contract under these circumstances occurs at points which lie on the demand curve, and hence are efficient. Unions are content to let the university determine the number of faculty to hire, and confine their bargaining mainly to compensation rates.

Now, suppose there is a huge change in the situation facing universities which causes a decline in demand for university output, or there is a deterioration in the "price" of university output;[44] such as decreasing government grants, g, or an increase in the non-capital costs of providing university infrastructure, c; or all three. This will result in the demand curve moving to the left, and the isoprofit curves moving upward, and the efficient outcome may move to a point such as H in Figure 3. In the case examined by Oswald (1993), where layoff are possible but implemented through a seniority rule, N* has the interpretation of the median seniority level. The reduced labour force after layoffs will now redefine a new N*, and in the next period re-establish an interior solution outcome.

With the institution of tenure in universities, however, there is literally no accepted (meaning previously agreed to) layoff rule. Corner solutions are not only possible — through movements caused by decreasing government support, escalating costs of library and support services, etc., and reduced student enrolment, as outlined above — they also have no "next period" resolution because of tenure. Indeed, the demand curve is kinked at K and is vertical since the university is constrained to "demand" its entire tenured faculty. Tenure also explains why universities can have no recourse to "concessionary bargaining," that is, having unions agree to layoffs, job adjustments, and the like.

This simple model suggests why (a) cutbacks in government grants, (b) cost pressures on university budgets, (c) limits to tuition increases, and (d) declining interests in attending a less "excellent" university have, at the moment, all resulted in an assault on tenure. Because there is no previously agreed-to mechanism in place to reduce staff, such as a seniority rule, university administrations and faculty unions are not so much bargaining over an acceptable contract outcome as they are contesting the very rules of the bargaining game. Accordingly, intuitions on both sides are correct in thinking that tenure is at stake, for unless tenure is reconsidered, we may well find ourselves operating in that zone left of N*, which can be justly characterized as "financial exigency."[45]

It is even possible to argue that universities have already resorted to certain labour force adjustment methods as a result of fiscal pressures. Viewed in terms of industrial relations between union and management, there has already been substantial activity which is consistent with the bargaining positions one would normally expect of both parties. For example, Gunderson (1989, pp. 350, 367) notes that professional associations try to control substitution by management of less highly trained (and less expensive) workers for professionals; and that the generalization appears "robust" that ". . . unions have a positive impact on the compensation of their members and a slight negative impact on the wages of nonunion workers." Universities have increasingly responded to financial pressure by (a) ceasing to hire or replace academic staff, and (b) engaging more sessional staff, who are paid at much lower scales and are not eligible for tenure. This suggests that universities have pursued a kind of "in-house contracting out," but this achievement by stealth appears insufficient; hence universities must now turn to actual concessional bargaining with respect to "work adjustment" and layoffs. Of course, it is the layoff issue that collides head on with the institution of tenure.

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[44] This could be due to declining "excellence." We can solve $F'(L) = w$ to get the demand curve for labour $D = D(w, X)$ where X is a parameter of "excellence" with the convention that as excellence X falls, the demand for L falls as well.

[45] I do not mean to imply that universities literally see their demand for faculty as falling short of present tenured supply. No doubt universities have been adjusting through the hiring process (implementing a no-hires policy), substitution of labour (using sessionals or graduate students), adopting just-in-time production methods (hiring lecturers or instructors on the first day of class, if necessary), changing work rules (larger classes, cutting programs), and stepping up financial monitoring (such as restricting smart individual sourcing) on the silly assumption that compliance costs are zero. Universities are also soliciting funds from all sources, charging full costs for certain programs, and, in some cases, cranking up their public relations and advertising efforts.

DESIGNER TENURE IV: WHY MUST TENURE BE FOR LIFE?

The granting of tenure implies that a professor will now be assured of continuing employment and job security if certain standards of performance are maintained. Tenure, therefore, represents a breach in the terms of employment previously set out, in the sense that new contractual arrangements now apply. This gives rise to several issues. What should be the length of tenure specified in the contract? Should tenure be for a specific length of time, subject to renewal or renegotiation? Should tenure be granted for "life," or for the entire career span if there exists mandatory retirement? If post-tenure employment carries with it higher pay, extra benefits, or both, a more provocative way of asking the same question is: How long should tenured professors continue to be overpaid? For a fixed period specified in advance? For the rest of the professor's life? From the point of view of contract design, the question becomes one of determining the length of tenure in the contract.

Some of the complexities involved in the question from the viewpoint of incentive-compatible arrangements may be glimpsed from the following heuristic treatment as, again, the mathematical models are often difficult to grasp without a high degree of formal training. Consider two extreme alternatives. One is continuous (say, annual) renegotiations of wages between the university and professors. This spot-market contract has no "tenure length," and all things being equal, professors are paid the value of their output each period, and are free to recontract each year. The other extreme occurs when tenure is granted "for life" at prescribed wage rates, and there are no renegotiations at all after tenure.

Consider now two aspects of the university "production" process which affect the level or quality of university output. The university may make expenditures on its staff which enhance professors' output; that is, the university decides to make investments (I) to train, support, or otherwise develop the potential of its faculty, thereby encouraging better performance or enhancing the institution's reputation. In short, there is some measure of support or training that is possible by the university, and this activity results in gains to the university greater than what it would otherwise be in the absence of the expenditure of I. Similarly, faculty may influence the overall university gain by their level of effort (E); this is simply the familiar shirking phenomenon. If faculty effort cannot be observed, the presence of shirking will lead to less than desired output levels. The question can now be stated in a sharply phrased manner. With university administration and faculty each able to determine their levels of I and E respectively, what is the desirable contract length for tenure?

Two further (perhaps innocuous) assumptions need to be made for the sake of completeness and clarity. First, it is assumed that increasing amounts of I increases faculty performance, otherwise why would the university bother to train or support junior faculty before their tenure decision? Second, it is assumed that faculty performance is related to their effort, otherwise why would the university care about "shirking"? With these preliminaries out of the way we can now ask: How long should the maximum tenurable period be? And how long should the maximum tenured period be? More formally, if H is the career horizon of a faculty member, and T is the tenure decision date, and T* is the post-tenure contract length, the contract "space" is said to be the interval [0, T, T*, H] where university employment begins at zero. This reveals that tenure effectively divides the career period into different parts, and contract design must take into account the interval [0, T] as well as the interval [T, T*, H].

Now, if university investment I and superior effort E both raise university output, the issue becomes one of designing a contract in which both parties receive incentives to encourage their productivity-enhancing actions. The best choice of T (and T*) can be established only under some special assumptions, which many may not be willing to accept as generally applicable. On the other hand, if universities can vary I continuously, and if effort can also be varied in a continuous fashion, then unfortunately there is no fixed-wage contract that will induce the first-best levels of both I and E (Cantor, 1990).

In other words, there will be conflict of objectives, thereby necessitating some sort of compromise. Consider the following non-rigourous arguments. During the untenured period, universities expend I in order to enhance future productivity of its probationary appointments. It is well recognized that individual faculty must help to "finance" such specific training through lower wages; that is, their spot productivity exceeds their spot wages. Furthermore, the prospect of an unfavourable decision in the upcoming "tenure tournament" should be sufficient to deter shirking. The gains therefore accrue to the university; in economic jargon, the quasi-rents (excess of returns over wage costs plus investments) become the property of the university. This being so, the university has an incentive to increase the length of the pre-tenure period [0, T] so as to maximize its quasi-rents. On the other hand, faculty might want to minimize the [0, T] so as to maximize the length of [T, T* = H]. They would want tenure for life in order to guarantee job security and higher pay levels associated with the post-T phase. In any case, the best choice of T (and T*) will differ for the university and the faculty member. The university would like to have T as late as possible in the academic career cycle, while faculty members would want T to be as early as possible, and T* to be equal to H so as to maximize the duration of [T, T* = H] in order to appropriate a greater share of the quasi-rents after T.

Universities will generally try to resist this if they can. To see this, we must recognize that shirking was not a problem for the pre-tenure phase because job security and high pay would only be realized "in the next period"; that is, in future. It was the promise of future rewards, not current remuneration and contract conditions, that deterred shirking in this incentive-compatible arrangement. Accordingly, arguing by backward induction (a common practice in game theory), once a faculty member knows for certain that tenure lasts until the end of the career horizon, there can be no incentive to avoid shirking in the previous contract period. Hence the contract will not be incentive-compatible from the point of the university designing the employment contract.

Despite the highly stylized and simple setting of the above discussion, the main point should not be lost. Just as the traditional literature suggests that contracts which are subject to continuous renegotiations (tenure period is zero) provide ineffective incentives for human capital accumulation, so too should it be recognized that non-contingent career-long contracts (tenure for life) also have their incentive-compatible flaws. This should be recognized in several ways, besides mere acknowledgment that some trade-off must be made with respect to the choice of T and T*. For example, Carmichael (1988, p. 469) points out that there is nothing to stop the tenure process from being a sequence of decisions. If tenure at successive stages were coupled with promotion decisions, this would further confuse matters. And the issue of administrative costs come into play as well since tenure decisions are extremely expensive in time and resources. The lesson that there is no single first-best solution for T and T* simply means that we must examine other institutional arrangements for university contracts for academic personnel; there are many possible candidates for second-best honours. We consider an alternative to multiple tenure decisions in our moderate proposal.

REDEFINING THE NOTION OF TENURE: A MODERATE PROPOSAL

Tenure is much more than mere job security. It is a particularly efficient screening device because it requires minimal monitoring, since faculty will not shirk because of the stakes involved. Further, information on output and effort is difficult to obtain, and assessment of performance is impossible for manager-administrators who have no knowledge or basis to judge the quality of performance. Peer review is undoubtedly superior to other methods in insuring that those faculty granted tenure will be of the highest standard possible. Further, the tenure design is exemplary in its incentive-compatible feature. For the complex attributes required of an academic, it is extremely difficult to observe effort. Accordingly, tenure is an incentive-structured method by which potential faculty take part in a "contest" against a standard, rather than an explicit opponent. In the absence of measurement error, contests against a fixed standard result in a lower contest variance than a tournament against opponents (Lazear & Rosen, 1981, p. 857). It has already been noted that players' efforts (or human capital investments) depend on the spread between the winning and losing prizes. In the case of tenure for an individual, the winning price is long-term job security at increasing wage levels with minimum direct day-to-day monitoring of work. The losing prize is immediate mandatory retirement from the university; not even a set of steak knifes. One could not imagine a more stringent spread between the winning and losing prizes. Therefore, neither politicians nor taxpayers need worry that insufficient incentives exist in universities, certainly not with respect to tenure. Indeed, the institution of tenure in universities is an exemplar of the self-enforcing, incentive-compatible contract arrangement, and carried out by an expert peer review process at fairly low cost. In fact, without exaggeration, it might be said that self-enforcing incentive-compatible arrangements in a workplace are the sine qua non of collegiality and academic freedom — the traditional hallmarks of excellence.

But tenure, we have seen, also has its disadvantages. In particular, the back-end loaded wage structure for post-tenured faculty is problematic in two ways. It is socially inefficient because it locks in faculty to the university even when they might be more productive elsewhere or doing other things, such as seeking electoral office, for example. Early retirement plans, where they exist, are seldom designed sufficiently flexible to achieve social efficiency; instead they are typically aimed at reducing staff on a voluntary basis. Ideally, severance pay structures or exit payments are necessary to pay the back the remaining value of the performance bond. It can be shown that severance payments will mitigate the tension between the consumption smoothing and wage insurance features of wage profiles by adding an extra degree of freedom to the contract (Lam, Lui & Wong, 1995).

The second way in which tenure is potentially obstructive occurs when it becomes necessary to terminate faculty. This need not always be due to an apprehended "financial exigency," in which a corner solution gives rise to take-it-or-leave-it positions (called bang-bang solutions in optimal control theory). Presently, the game is structured so that one either affirms the sanctity of tenure so that no tenured faculty can be terminated, or else the university management must invoke financial exigency, in which case, tenure is suspended. However, there is a middle ground.

Tenure, instead, can be reconfigured so as to yield a more acceptable trade-off between its laudable incentive-compatible characteristics on the one hand, and its structural rigidity in the face of desirable changes, on the other. But first, we need to examine more closely the related issues of pay and promotion.

Even if critics of tenure come to understand the nature of the tenure process, and the logic of the delayed payment characteristic of university salary structures, their obvious next question will be as follows: Conceding the virtues of tenure as an efficient sorting contest to ensure the university hires, and keeps, the best among the young, what prevents older faculty members from shirking *after* they receive tenure? And there is a long career interval between achieving tenure and retirement. Promotion through the ranks is an unconvincing answer. In many cases, the tenure standard is not much different from the standard for promotion to the rank of associate professor. So even if the prospect of promotion to full professor is thought to be sufficient to prevent shirking among associate professors, the question returns with a slight rewording: what prevents the numerous (and older) full professors from shirking?[46] The spread between the winning and losing prizes, *vis-a-vis* tenure, also appears inconsequential. Promotion to full professor in Canadian universities results in little increase in pay or non-pecuniary benefits; and there are no horrible consequences from being denied promotion, such as being asked to resign. One may subsequently re-apply, or one does not even have to apply at all during an academic career. It seems fair to conclude that promotion through the ranks has less anti-shirking force than does tenure.

On average, full professors receive higher levels of pay than associate or assistant professors. Salary increments at various ranks vary among Canadian universities; some increase, some decrease, and some are constant (Grant, 1993). Universities which adopt a declining profile for progress-through-the-ranks increments are probably motivated by the human capital paradigm. Academics accumulate human capital through knowledge and research, but as they get older, they are thought to add to this stock of human capital at a slower rate. Their human capital may actually decline. Hence it is appropriate, it is thought, to give more senior faculty smaller and smaller increments to salary. On the other hand, the salary structure should be steep enough to induce greater effort and prevent shirking, even among senior faculty.

At this point, we must be a bit tedious and careful with distinctions. The human capital model is also compatible with wage profiles which are steeper than productivity profiles, though the explanation is different. In the human capital framework, younger workers receive lower wages because they are undergoing a period of specific training. After completion of training, they receive higher pay because they are more productive. Specific training is human capital investment which raises productivity only in the firm offering the training, and nowhere else. Employers will not provide general training "free of charge" since the trained worker will be free to take his skills elsewhere, thus depriving the training firm of its investment.[47] Similarly, firms will have an incentive to poach skilled workers from other firms. Therefore, conventional interpretation claims that firms will only provide specific training, not general training, and that the trainee must pay for part of this training through lower wages. If, also, human capital depreciates with age, so that the return on older vintage capital is declining, it is appropriate that incremental salary amounts decline with seniority if wages are based upon productivity in the post-training period. Declining progress-through-the-ranks increments are therefore appropriate.

The agency paradigm — or the anti-shirking model, as we have called it — suggests a different structure, even though it too requires that wage profiles be steeper than productivity profiles. Here the wage structure is designed to eliminate shirking. First, a slight digression. Do low wages for probationary faculty seem plausible when argued as the faculty's "cost" of specific training being provided by the university? Most non-tenured probationary appointments already possess the Ph.D., have some teaching experience, and research practice or publications. In other words, they have all the general human capital they need to begin their professional career the day they step on campus. How much specific training, then, does this new faculty member need, in the way of instruction on how departmental committees function, where the washrooms are located in each building, how teaching is evaluated, or how matters such as travel expenses, grade appeals, and union policies are handled? Does it really require the length of the maximum untenured period, which is roughly five or six years? Or even longer, since tenure may not be the exact point at which wages equal productivity.

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[46] In 1990-91, 38 per cent of university faculty in Canada held the rank of Full Professor. By age cohort, 60 per cent of those between 55-59 years of age were full professors, and 72 per cent of those above 60 years of age were full professors (Grant, 1993, p. 37).

[47] The classic statement of this is by Mincer (1975). Hum and Simpson (1996) discuss training and its returns in Canada within a human capital context.

If the agency model, by focusing on its anti-shirking aspects, is accepted as a better guide for designing an optimal wage contract, then there should be substantial salary consequences associated with promotions. Promotions are "tournaments" against a specific standard, and not mere career progress through the *same* rank. Therefore, while *declining increments in the same rank* are compatible with the views of the human capital model, promotion to a higher rank requires, for its incentive goals, that salary levels at the next rank be higher in order to create some incentive "spread" between winning and losing prizes. It is possible to give a large and immediate salary adjustment to those who have been just promoted to the next rank, say to full professor. It would now be possible to incorporate declining increments for progress-through-the-ranks adjustments on the human capital arguments discussed above. But this does not typically happen. Instead, the spot salary changes upward only slightly. Universities seem loathe to associate large jumps in spot wages at promotion, contrary to private sector practices. However, with increments which rise with rank, the overall result is incentive-compatible in the sense of avoiding shirking. This is because the "spread" is the difference between the winning and losing payoffs over the remaining career life, and not the spread between the spot rates at the time of the promotion contest. With higher increments associated with the full professor rank, the prize should be seen as being simply structured in a special way; namely, being paid in installments over the remaining career life of the academic, much like some lotteries — except they typically publicize the size of their awards in terms of the total sum to be paid out.

We are now in a position to sketch a recommendation for reforming the institution of university tenure. The proposed redefinition of tenure is modest. It involves making the term of tenure limited but related to rank. More particularly, tenure for an associate professor is deemed to end at, say, age 60; while full professors retain tenure until, say, 65 years of age. The age levels are merely illustrative. Tenure is here meant simply as the date at which the contract ends: it does not mean that professors must resign, which is the case when tenure is *denied.* University faculty may still be retained after their tenure termination date, but obviously on a new contractual basis. Since tenure is associated with rank, it is desirable also to specify a maximum eligibility period during which a faculty may apply for promotion; for example, an associate professor may only apply for promotion to full professor within 10 years of achieving the associate rank. Again the number is arbitrary, for argument purposes. Coupled with salary spreads by rank, the above modest change should lessen overall shirking and introduce more flexibility in union-management relations.

Why is this modest reform an improvement over present arrangements? First, the laudable features of tenure already noted are preserved. Faculty with tenure may now teach and research with some sense of job stability, and in the knowledge that their performance bond will be returned through higher future wages. However, the view remains that insufficiently strong incentives to prevent shirking exist after the tenure point remains; and promotion rules which dictate a time limit for promotion move the promotion process closer to that of tenure, where it is claimed that incentives to achieve and not shirk are especially strong. The prize for success in promotion is therefore not only immediate financial reward, but takes the form of longer guaranteed employment as well, the objective being to strengthen the incentive structure through increasing the spread. This change is incentive-compatible as well from the self-enforcing perspective. Promotion is no longer merely an individual achievement. It will also affect the standards applied to promotion, as departments will now be forced to confront the consequences of their decisions. It is not just a matter of rank and title, nor is it merely an issue of higher pay through larger increments and a higher salary cap for the university. It will also be a judgment whether the particular colleague will be welcomed for a career of contribution that is longer rather than shorter in duration. Departments will therefore have an interest in ensuring that promotion standards are high since they will suffer the consequences of lax standards by having less productive colleagues for longer periods.

This brings us to the industrial relations aspect of administration — faculty union bargaining. Our above model of the situation, if accepted, suggests that gridlock occurs when the conjunction of declining enrolments, shrinking grants, declining reputation, escalating costs, as well as externally imposed constraints on tuition increases or admission policies require a new contract point which is outside the "core" of the bargaining zone. Tenure plays a special role in that no agreed-upon rule exists for adjusting staff, such as seniority or first in – first out conventions when it comes to tenured academic faculty. In universities with mandatory retirement, relating the term of tenure to rank introduces a degree of freedom, if required.

Under the reformed tenure system, professors whose tenured period has expired will no longer be guaranteed employment in the sense that they constitute the pool from which first layoffs, if necessary, will occur. In essence, their seniority is truncated. This introduces a quasi-seniority rule for possible layoffs. But rather than the traditional "first hired – last fired" system, which discriminates against the young and less senior, our proposal concentrates potential layoffs among the more senior, the higher paid and either less hard working or less talented.[48] It might be labeled as the "first hired -first fired" rule. If layoffs should occur, the revised tenure conditions outlined above will also have the salutary effect of lowering the average age of the faculty. If hiring possibilities emerge, and supposing that new faculty members take these positions, rather than all formerly laid-off members returning, the average quality of faculty should improve, on the assumption that academic productivity peaks before 60. Our proposed reform to tenure is therefore complementary to the pursuit of an overall excellent faculty.

The proposed reform of tenure, despite its language, is no stranger to university practice. Universities routinely appoint individuals, even though recently retired, on non-tenure contracts. The post-tenure appointment simply adds to the vocabulary of contractual arrangements, which now already includes post-retirement appointments. However, there are implications.

IMPLICATIONS OF THE MODERATE PROPOSAL

Linking the length of tenure to rank will have some "incentive-compatible" effects since increasing the spread in "prizes" between ranks will motivate greater effort. At the same time, limiting the length of tenure has implications because it severs tenure from the notion of lifetime job security. Whether this turns out to be good or bad will depend upon individual circumstances. Nonetheless, some general points should be noted. First, professors at the end of their tenure status are not necessarily retired or fired; they may choose to stay on, but their guarantee of job security is no longer absolute. Thus, the notion of tenure *qua* life-long job security and the status of being employed is severed. Second, should they completely retire (rather than seek another career), their pension start date may not coincide with their university end date. This problem is not unique to university professors, and befalls anyone whose job termination does not match his or her normal retirement date. At least, in this case, university professors know in advance their tenure-end date and can plan accordingly. With improving health standards, some have suggested that normal retirement dates be indexed to life expectancy. This approach is probably only appropriate when considering government-provided old age pensions, and is probably less relevant in the present context.

To see this, consider the following. If tenure is a life-long job security concept, then the tenure-termination date is effectively the retirement date. With mandatory retirement, pension benefits replace salary, and university duties also cease in a seamless transition. If individuals retire "early," they must accept a smaller pension. Exactly the same effect will occur by fixing the date of retirement and extending life expectancy, so the issue is one of adequate post-job income, not tenure per se. If, as is often assumed, productivity peaks for academics well before the normal retirement age now adopted by Canadian universities, life-long tenure (and no mandatory retirement) is inimical to increasing life expectancy. It may well be socially efficient for less productive professors to seek other jobs (see point Q in figure Two) at their tenure-termination date if they have expectations of a long life.

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[48] There are many possible reasons why older professors might be less productive in the sense of publishing less. The Scottish philosopher and historian David Hume (1711-1776) gave four of them. After achieving a certain degree of financial comfort from his pensions, Hume was asked to continue and update his popular *History of Great Britain*, but he said, "... I have four reasons for not writing: I am too old, too fat, too lazy, and too rich."

The issue is really one of life-time productivity, pay, and life expectancy. An analogy to sports is perhaps helpful. Professional athletes have short career spans of high productivity (and high pay) relative to their normal life expectancy. When they retire from professional athletics, many must pursue other careers at lower pay. If life expectancy of professors were to increase to 120 years, say, the problem would be identical. Professors at their tenure-termination date no longer have a "no cut" contract; they are simply "picked up" on a year-by-year basis, or they may choose to pursue other jobs. There is life after tenure termination.

A third implication of linking the length of tenure with rank, and eliminating the concept of absolute lifetime job security, is its effect on salary structure. Professional athletes accept the spectre of declining performance and consequent job loss because they receive their full value of marginal product while employed. There is no deferred payment feature. (I abstract from the deferred payment features due entirely to tax considerations.) Professors do not enjoy spot wages equal to spot productivity. Consequently, adjustments to the salary structure of academics will be necessary, and this could take several forms. More of the pay could be "front loaded," in which case the resulting flatter wage scale would reduce incentive signals, even though promotion and tenure-duration remain as incentive-compatible ingredients. Another possibility is to return a larger "bond" at the retirement date, or to grant a termination or severance package, bearing in mind that *tenure-termination does not necessarily mean employment-termination* under the above proposal.

The last point raises the following interesting question. What might be some of the legitimate reasons why a university would want to get rid of a particular professor or groups of professors? Let us ignore malfeasance since tenure should not be a difficulty here if due process is followed and the standard of proof is set by outside third parties such as an arbitrator or the courts. That leaves shirking or below-par individual productivity performance, or genuine "financial exigency." But tenure is not really necessary in the case of an individual if one suspects that mere money saving is the university's motivation for dismissal. There are other ways to structure an incentive-compatible contract. Consider the case of "successful" athletic coaches in highly competitive collegiate conferences. Winning teams cannot always be guaranteed in any given year (spot productivity); yet some staff stability (long term contracts) is desirable. But at the same time if a head coaching change were thought necessary, tenure would be an absolute hindrance since the university could not get rid of a losing coach and bring in a new one. Some highly competitive schools are thought to have contracts structured in the following way.

(One never knows for certain, as these are individual arrangements.) Some minimum benchmark is agreed to, either formally or informally, such as a winning season (that is, wins exceed losses), final ranking in one's home conference, invitation to the regional qualifying tournaments, etc. There may also be special "merit" achievements (such as, selection for national finals, making the "sweet sixteen," or bowl appearances). A coach does not have "tenure" but, say, a five-year contract instead. Each year that the coach reaches or exceeds a certain stipulated performance level such as a specified ranking or a national final appearance, the contract is "torn up" and another five-year contract signed, not necessarily at the old salary.

What are the incentive-compatible features of this arrangement? The coach will obviously have an incentive to perform at a high level, for the rewards are additional job security and pay. By rolling over the contract with good performance, the coach effectively determines the value of the severance payment or personal "departure bond." For the university, if a change is thought necessary, either because present and expected performance is below acceptable standards, or alumni pressures are too strong, or whatever, actual change is indeed possible and no way hindered by tenure. The cost, however, is the payout of the remaining life of the contract, which can be quite substantial. Hence, it is unlikely that dismissal of head coaches will take place for marginal savings of salary alone, but rather more for legitimate and necessary "program and structural" changes having to do with productivity performance.[49]

The proposal for reforming tenure is modest, and works "at the margin," as economists would say. It is not especially revolutionary, and aims at altering the balance between strengthening of incentives to motivate faculty, and introducing flexibility to the current bargaining framework. Many will have other suggestions, especially university administrators, lawyers and labour arbitrators, faculty union leaders, and, of course, politicians and the public. This proposal is moderate rather than radical, intending to be measured rather than hysterical. It will be a disappointment to those wanting the complete abolition of tenure for university professors; however, it will also be disappointing to those who wish the status quo or tenure provisions to be "strengthened."

It is appropriate here to quote Charles Schultze, a highly-respected economist with a wide range of practical experience, including a stint as Chairman of the Council of Economic Advisors (in the US).[50] Upon observing nearly forty years of policy debates, Schultze (1996) reports amazement at how few people concerned with policy matters grasp the fundamental economic principles, and how differently from economists noneconomists analyze issues. He goes on to write:

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[49] During the recent bitter University of Manitoba strike (over tenure, it is alleged) one of my economist colleagues suggested to the faculty union that professors might want to consider giving in a bit on the tenure clause but negotiate a "high" severance pay provision so that the administration would think twice about terminating "high-priced tenured professors" just to save a few bucks. This professor's proposal (written and circulated) fell on deaf picketers.

[50] I am indebted to Norm Cameron for drawing the following quote to my attention. I merely substitute the issue discussed in this essay for the examples used by Charles Schultze. The comments in square brackets are mine.

> Several reasons stand out for the wide divergence between the views of economists and others. First, to politicians the world is full of corner solutions; the idea of continuous cost and demand curves with nonzero elasticities is foreign to their way of thinking. Second, some important principles [in economics] are counter-intuitive; for example, [paying tenured senior professors more than their untenured junior counterpart can make sense] . . . Depending on costs, there is almost an optimum amount of "bads" that society shouldn't eliminate.
>
> Third, noneconomists have an almost universal desire to deal with market failures through carefully specified regulation rather than a change in incentive structures. Such specification is the natural function of lawyers. When government intervenes in the marketplace, our political leaders typically rule out the manipulation of economic incentives to deter undesirable actions because reliance on market responses injects an uncertain, partially random, and therefore "unfair" set of forces into the picture.
>
> Economic theory [seeks] to define rigorously the conditions under which market failure is likely to occur, which helps to enormously in weeding out the specious cases for intervention. . . When a legitimate market failure does occur, economic thinking can enormously improve the effectiveness and efficiency of the policy response. The political response all too often fails to match the policy instrument to the specific nature of the failure. . . Because microeconomic understanding among many of the players in the policy game is often so low, the injection of basic microeconomic principles, well back from the frontiers of research, can significantly raise the quality of the debate. (pp. 27-28).

There is no need, in my judgment, to rush to reform by abolishing tenure. No doubt change is overdue, but the necessary alignment requires thoughtful movement rather than rash action. Somewhere between the claim that only laser surgery on the cornea by highly trained professionals will make you see better, and the political urge to wield a kitchen knife to the whole eyeball, should be the reminder that correctly fitted eyeglasses may be more efficient and less costly for sharper sight. But perhaps what is precisely lacking, long term, is some sense of vision for Canadian universities. In the meantime, a moderate proposal for now.[51]

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[51] I had originally called my suggestion a "modest proposal" but changed it to a "moderate proposal" instead so as not to summon up associations with Jonathan Swift. A loose reading of Swift might encourage university administrations to pounce on their young and untenured faculty when it is clear that my reforms are directed towards shedding the more senior and the less productive.

MISPLACED PRELIMINARIES AND CONCLUDING REMARKS

This essay concerns the institution of tenure as it is currently practised in Canadian universities, with a lengthy "postcard" about German universities. Its aim is to explain why tenure is useful, and why it is thought useful by many who would defend the practice. This is necessary, in my judgment, because faculty tenure is not well understood, and the arguments commonly marshaled in its defense employ notions such as academic freedom, or collegiality, or the right of free expression — all ideas that are quite distant from the normal discourse of employer-employee relations, if not public policy in general. That being the case, my strategy has been to eschew the conventional line of defense since, whatever its merits, it relies too heavily on abstract concepts, and the appeal to intuition or emotion in establishing the relationship between academic freedom, say, and faculty tenure, or indeed, self-interest. Accordingly, I have avoided vocabulary such as "rights" or "individual autonomy" and the like; there are no lengthy philosophical digressions in this essay. In other words, I have examined "tenure" with what some philosophers and most economists might call an analytical approach, allowing its meaning to come forth as its practice in Canadian universities is described.

Similarly, there is no lengthy history of tenure practices, nor how it has evolved, or even how it has come to be viewed in Canadian universities in this essay. My references to Underhill and Crowe are meant solely as popular examples illustrating a point rather than some pivotal historical turning point. Since Skinner's (1969) essay on meaning and understanding in the history of ideas, it is hard to take too seriously anyone who would advance the claim of telling us what tenure actually "means," or what one ought to "understand" about tenure, or purports to set down the official history of tenure in Canada. My purpose, then, is merely to pose the issue of tenure as it is commonly understood by contemporary commentators who are frequently inclined to instruct universities about reforming faculty tenure and pay practices. What do I hope to achieve? Simply a different explanation of tenure than the customary one now in wide currency, and to suggest some reforms. By explaining its rationale in terms of incentive structures which are less costly than other alternatives because of the difficulties of making judgments, and by explaining the rationale behind deferred compensation, I hope to make tenure and pay structures more transparent to the general public. I am, of course, conscious of the fact that I may be accused of mere rephrasing, but there are many organizational structures in the non-university sector that have *de facto* tenure as well as pay schemes that do not reward spot productivity with spot wages. But because the pay of many corporate workers is equally mysterious to the general public, I have employed many references and analogies to professional sports tournaments for exposition purposes. In many ways, the practices of universities may not be as exceptional as many would like to believe. Many employers, and I assume as well the public, would be willing to accord employees job security if they performed their duties to stipulated standards. It just happens that the job of university scholars is to "think" and to "express freely" their ideas, hence their seemingly curious and ineffective explanation of their contractual arrangements in language that both the politicians and the public are unaccustomed to hearing.

No one is ever more aware of the shortcomings of a work than its author. I have not examined the entire university system, its funding relationship with government, nor even the desired relationship among universities in a single province. My analysis is what economists term "partial analysis," since it takes no account of what other universities or parties might do if my suggested reforms were implemented. The implicit assumption is that other universities will be strongly persuaded by my arguments and enact similar changes; otherwise any university which was seen to provide less "tenure" protection than universities elsewhere in Canada would be at a competitive disadvantage. I have also not addressed a host of other problems besetting Canadian universities, resisting this urge to give freely of my wisdom. It is probably better to parcel out unsolicited policy advice in small amounts so as not to cause too much litter.

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